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An Address.[1]

SOME ASPECTS OF MEDICAL PRACTICE IN VAN DIEMEN'S LAND, 1825-1839.

By W. E. L. H. CROWTHER, D.S.O., V.D., M.B., B.S.,
President, Tasmanian Branch of the British Medical Association.

They journey, manhood, youth and age,
The matrons and the maidens,
Like pilgrims on a pilgrimage,
With burdens heavy laden.

GORDON.

BEFORE delivering this address I should like to say how much I have appreciated the honour of acting as President of the Tasmanian Branch during the year just completed. That I have not been of more use to the Association, and particularly to the Anti-Cancer Campaign Committee in the latter months of 1934, has been due to causes beyond my control.

During November died Dr. Eric Jeffrey, only a few weeks after his masterly Jackson Memorial Lecture had been given in Brisbane. I have missed his wise advice greatly in preparing this address. The choice of a subject is never easy, and I fear that before I have finished you will feel that I have dealt altogether too much with a member of my own family. My explanation is that in reading early files of our newspapers I have copied references to him as being of particular interest to myself, and only after long reflection did it seem that these incidents would give others an idea of medical ethics and practice in the early days of Hobart Town.

At the commencement of 1825 the small community of Van Diemen's Land was still under the

[1] Delivered at the annual meeting of the Tasmanian Branch of the British Medical Association on March 2, 1935.

strong and wise hand of Colonel Sorell, who as Lieutenant-Governor had done much in suppressing the widespread unrest due to bushranging and attacks by aborigines.

The inhabitants of the island, free and bond, were centred at Hobart Town and Launceston, connected even then by a good road. Colonel Macquarie had indicated the sites for a number of inland towns, but it would be safe to say that their occupants were at this time principally military parties and gangs at work on the roads.

Yet a stream of free settlers had been coming in for some years and land had been allotted to them through the midlands, the east coast and the fertile valleys of the Clyde, Derwent and Esk. The number of the inhabitants of the island at this time (December 31, 1824) was 12,643, of which total only 2,949 were females, and of this number a large proportion would be part of the government system. The influx of free settlers had set in steadily, however, and the colony, with the rapid expansion of its valuable whaling industry, was passing through a very prosperous period.

The medical care of the community was divided between the Government Medical Department and a very limited number of private medical practitioners. The former consisted of ten medical men, three of whom, with a dispenser and a clerk, were at Hobart Town. Bent's Almanack for January, 1825, mentions only two private practitioners, one of whom is described as an apothecary and a second as a man-midwife. Mrs. Barrett and Mrs. McTavish are also named as midwives. The Government Medical Department staffed and controlled the Colonial Hospital, other medical men being excluded therefrom, except for surgeons of the naval and military forces.

On January 28, 1825, the ship *Cumberland* (Captain Carns) arrived in the Derwent after a long and unhappy voyage, in the course of which she had had to refit at Rio de Janiero. Among her fifty-two passengers were Mr. Alfred Stephen, Major Lord and, as surgeon, William Crowther, M.R.C.S., my great-grandfather. Bitter quarrels had taken place between William Crowther and an influential passenger who was proceeding to Van Diemen's Land to take up a post in the government service. Another argument between himself and Captain Carns had terminated only after blows had been exchanged. As a sequel he was defendant in one and plaintiff in a second civil action before the Supreme Court at Hobart Town within a few weeks of landing.

William Crowther, the fourth son and one of fourteen children of Phillip Wyatt Crowther, a lawyer, holding at the Guildhall the position of Comptroller to the City of London, had been born in 1788 at Stockport, Cheshire, and had taken the M.R.C.S. and L.R.C.P. diplomas from Guy's and Saint Thomas's Hospitals on February 5, 1819.

Until 1826 Guy's and Saint Thomas's Hospitals had shared a common medical school for the teaching of their students and, although the students acknowledged one or other of the hospitals as their Alma Mater, they made free use of the more famous teachers in both hospitals.

It is written in Crowther's medical note book that he was the pupil of two physicians, Dr. James Curry and E. Chomondley. The former was famous as a teacher, and his medical lectures were printed in an octavo volume well interleaved. I shall quote later from clinical and other matter written on these pages during the course of the lectures and in after years.

William Crowther has written there of Dr. James Curry (who was a firm believer in stimulating the liver by calomel *et cetera*): "by one of our wags he was termed the 'Hepatic Leviathan'." This wag may well have been that immortal, John Keats, a fellow student, who himself wrote in his note book: "The other day during a lecture there came a sunbeam into the room and with it a whole troupe of creatures floating in the ray and I was off with them to Oberon and Fairyland."

Sir Astley Cooper and Benjamin Travers were the outstanding names among the eight surgeons who signed his surgical certificate.

Obstetrics was evidently a matter of private arrangement, and a statement (in Latin) by Dr. David Davis records that Crowther had attended a course of instruction for four months in that subject. Anatomy and physiology again were subjects taught privately, in Crowther's case by Joshua Brooker at the Theatre of Anatomy, Blenheim Street. These were the days of the "sack-em-up" men, and cadavers evidently were not available for dissection and demonstrations at the great hospitals.

In addition to his work at Guy's, Crowther was probably apprenticed to Dr. John Cozens and practised with him at Islington, then and for some four years afterwards. He was physically a very tall man, being nearly six feet six inches in height. He was a heavy drinker (as were most of his *confrères*) and evidently impulsive and easily moved to anger.

His motives for emigrating to Van Diemen's Land are uncertain. Married to Sarah Pearson, of Macelesfield, he had a son and a daughter, born in 1817 and 1819 respectively. It is probable that the severe depression of the post-Napoleonic period was a deciding factor in the decision to go to the antipodes.

The journal and diaries of the long six months' voyage have been lost, probably destroyed when a heavy sea shipped off the south-west coast of Van Diemen's Land caused much damage to his books and papers. Only a family tradition remains of his two children playing on deck and drawing attention to a large number of sea birds in the vicinity, and the *Cumberland* being saved with difficulty from a reef or lee shore.

The first few weeks after his arrival must have been very busy ones. In addition to settling his family (the children were carried ashore from the ship's boat in a little cove adjacent to where the museum now stands), who stayed at first at the

Macquarie Hotel, he was occupied with his first law suit and with an application for a grant of land and a town allotment.

Following the custom of the period, the following announcement appeared in Bent's *Hobart Town Gazette* for February 1, 1825:

To His Honor the Lieutenant Governor, Public Functionaries, Resident Families, of Hobart Town, and settlers of the Country Adjacent.

Mr. Crowther, Surgeon, etc., Member of the Royal College of Surgeons London, Fellow of the London Medical Society, and Vaccinator of the National Vaccine Establishment, being impressed with the necessity of following the adopted custom of the Colony, respectfully solicits it may be accepted as an Apology for his offering Testimonials of his Medical and Surgical talents, which he has had the honour to receive from Sir Astley Cooper, Bart., Surgeon to the King, and Dr. David D. Davis, Physician Accoucheur to the Duchess of Kent.

Fully prepared for entering on the Duties of his Profession, he will not fail in exerting his skill, humanity, and attention to those cases under his Medical Treatment; and presents the following Prospectus of his Surgical and Medical Practice.—

Operative Surgeon and Oculist. Vaccination, Bleeding, Cupping, etc. Midwifery, on Terms suited to the Patient's situation in Life—the terms include all necessary Medicines.

Medicine prepared for the Public, to be payed for on delivery.

Attendance given to the most reasonable distance.

Fee on Attendance, which includes Medicine, no extra charge, or Bills Delivered.

Medicines and Preparations from Apothecaries Hall, London.

N.B.—Mr. Crowther's Diplomas and Testimonials are left for Public Inspection at the Gazette Office.

House and Surgery, Elizabeth Street,
Hobart Town. February 1st, 1825.

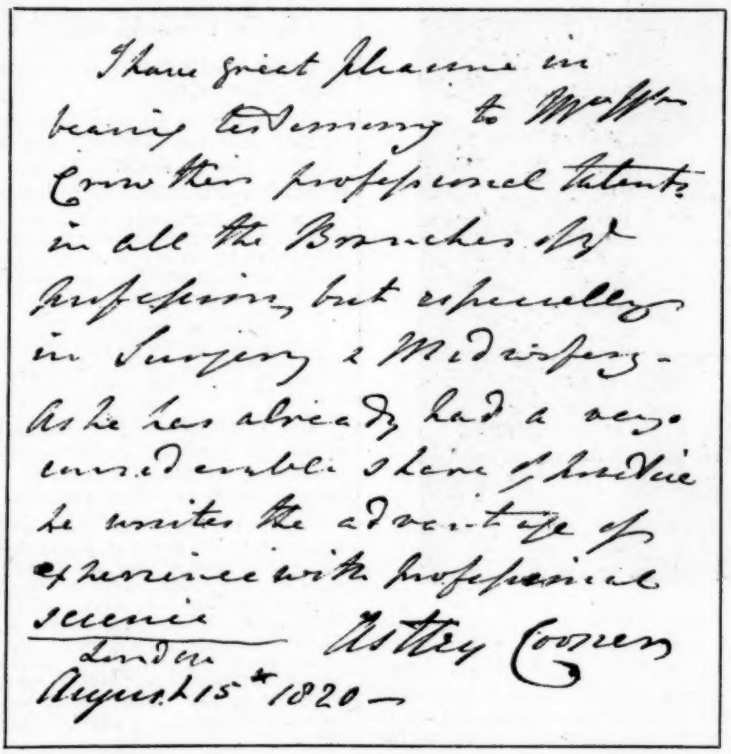
The testimonials were as follows:

I have great pleasure in bearing testimony to Mr. Wm. Crowther's professional talents in all the Branches of the profession, but especially in Surgery and Midwifery—as he has already had a very considerable share of practice he unites the advantage of experience with professional science.

Astley Cooper.

London,
August 15th, 1820.

A facsimile of Astley Cooper's testimonials is reproduced herewith.


I have great pleasure in
bearing testimony to Mr Wm
Crowthers professional talents
in all the Branches of
profession, but especially
in Surgery & Midwifery -
As he has already had a very
considerable share of practice
he unites the advantage of
experience with professional
science
London Astley Coopers
August 15th 1820 -

29 George Street,
Hanover Square,
August 20th, 1820.

I hereby certify that Mr. William Crowther, formerly my pupil in Midwifery, had been favourably known to me for several years and has had very ample and more than the ordinary opportunities for the acquisition of professional knowledge in the various departments of Medicine, Surgery, and Midwifery; and he has industriously availed himself of his peculiar advantages for making himself substantially competent and accomplished for the practice of his important profession in all its branches. I express, therefore, my firmest belief that his talents and acquirements, as well as his conduct and manners as a professional man and a Gentleman are such as to entitle him to the confidence and respect of any part of the Country which he may choose for his residence and for the scene of his future labours.

David D. Davis, M.B.

Within a week William Crowther was in active practice in Elizabeth Street, where he treated gratuitously from 9 to 11 on Mondays and Fridays the families of the labouring classes and assigned servants. (Advertisement.)

Several letters and many allusions in the Press of the next few weeks tell of the ill-feeling between those who travelled in the *Cumberland*, and also between its captain and the charterer, Mr. John Raine. The result of my ancestor's first law suit was disastrous to him, heavy damages amounting to £181 2s. 8d. (a large sum in those days) being awarded to the plaintiff.

In a second he sued Captains Carns for injuries sustained on the ship *Cumberland* after leaving Rio. Although heavily thrown on the poop and sustaining two broken ribs, he was awarded damages of only fifty shillings. Justice in Van Diemen's Land was not yet!

The after-history of the *Cumberland* and its captain is a very sad one. On a return voyage to England she was posted missing. In 1829 a pirate ship was captured and taken to Gibraltar, where a ship's bucket was noticed with the name *Cumberland* painted over. Confession of one of the pirates established the fact that the ship had been plundered

and then sunk, her crew and passengers having been killed or having had to walk the plank.

It would be well to consider here the activities of the Press at this period at Hobart Town. There existed a great division in the community between government officials, the military, and those attached to the government system and the rest of the free population. The government Press was very powerful and resisted the efforts of the opposition newspapers to obtain such measures as trial by jury, freedom of the Press *et cetera*. In consequence, politics caused much bitterness, and the strongest personalities were exchanged at the smallest provocation.

William Crowther.

The long interval between ships meant little foreign or English news, and the local happenings were fully chronicled. This applied particularly to medical matters, and it was accepted as usual for the causes of death, operations at the Colonial Hospital, inquests and other medical items to be fully reported and at times a lively discussion to follow.

The happenings on the Cumberland and the subsequent law suits were thus for a time given full publicity, and the cause of William Crowther was promptly taken up by Andrew Bent (editor of the *Colonial Times* and anathema to Lieutenant-Governor Arthur). In this way he became decidedly *persona-non-grata* in government circles. This was a constant handicap in his struggle to establish himself as a successful medical man in the community.

After two years' work he was again involved with the law. This time as defendant to Mr. John Raine, and, damages being awarded against him not being properly met, we find the sheriff stepping in with a writ of execution.

On June 9, 1827, therefore, Mr. Collicott advertises for sale on Wednesday next:

Mr. Crowther's household furniture, etc., consisting of dining, card and work tables, beds, bedsteads and mattresses, china and glass ware, an excellent barrelled harp by Longman, a double barrelled gun gold mounted by Nock with case complete, also a grey horse, saddle and bridle and a quantity of hay.

In the same number of the *Hobart Town Gazette* is this glimpse of the other side of the question:

Having during the last two years and a half given a generous unlimited credit, and aware of the danger of continuing the same, I beg respectfully to state that I am obliged to discontinue such a mode from this date, and I hope all accounts for Medical and Surgical attendance will be paid forthwith. Signed. William Crowther.

Later numbers do not state whether this sale took place or not.

It is difficult to ascertain conditions of practice at this time, but these extracts will throw some light on the fees expected. In the *Colonial Times* for December 15, 1826, the following appears:

Mr. Crowther, surgeon, having been informed that an erroneous report is in extensive circulation as regards his charges in Midwifery practice, is induced to give publicity to the terms to which he has invariably adhered since his arrival in this colony.

In attending the First Class	£5	5	0	Sterling.
In attending the Second Class	£3	3	0	
In attending the Third Class	£2	2	0	
In attending the Poor	£1	1	0	

The reference to sterling is probably due to the habit of making payment in such currency as dollars, rum, wheat *et cetera*. The same journal a month previously had reported:

Among the numerous cases which have occupied the attention of the Court of Requests we noticed one wherein the Head Groom of the Horse Dealings Co. was defendant and Mr. Crowther, Surgeon, Plaintiff. In the course of the examination it appears that the Defendant gave *very honourably* an order for a sum of money on his Master, Captain Thomas. The Captain, however, did not think fit to honour it, but retained the same in his possession, "thus pocketing the affront" with a vengeance and which probably led to the fracas which we lately noticed in our paper. We subjoin a copy of the enormous Professional bill.

To attending and setting James Arnold's rib, bleeding, bandaging, etc.	£2	2	0
To regular attendance, one month	£1	1	0
	£3	3	0

Verdict for the Plaintiff

The encounter referred to was described as follows in the *Colonial Times* of October 20, 1826:

FRACAS IN HIGH LIFE.

Last week a recontre, "a-la-Cribbe" took place between Dr. C.... and B. B. T...., Esq., in the Public Street, opposite the "Ship Inn", in which, although his antagonist displayed great science, the Doctor came off victorious, owing to his superior "Length". We are given to understand that the "length" of the "long" Doctor's "long" bill for "long" medical attendance was the cause of the quarrel.

The practice seems to have been increasing, and in March, 1826, the surgery had been moved to the house in Murray Street lately in the occupation of Mr. Glover, near the residence of the late Dr. Margett, and in the *Hobart Town Gazette* for November 18, 1826, the following appears:

MEDICAL PROFESSION.

Wanted a respectable youth as an apprentice. He will have the advantage of an extensive practice and will be treated in every respect as one of the family. A moderate premium only required, his assistance being the chief object. For particulars apply to Mr. Crowther, Surgeon.

The practice of training apprentices, well known in England, was probably employed in this instance for the first time in Van Diemen's Land. Dr. Maddox, of Launceston, W. L. Crowther, Mr. Harrington and possibly others were in succession trained in this way before going to England to complete their medical education.

In the newspapers of that period are many references to diseases, and we find that one by one the common infections of the old world are noted as occurring in the community.

The first mention of typhoid fever that I have seen is in reference to a case, full details of which are given in the *Hobart Town Gazette* of June 9, 1826.

ON THE TYPHOID CHARACTER AND TREATMENT OF THE BILIOUS FEVER OF THIS COLONY.

Among the various topics which the Medium of a newspaper conveys to the Public, those of Medicine and Surgery seem in a great degree, if not altogether, overlooked; and it is certainly the more surprising since they are subjects that come home to the bosom of every family.

In a colony of so recent a formation as this it can scarcely be supposed that the Faculty should have succeeded in the formation of a Society in which cases either very critical or of very rare occurrence could be introduced and discoursed upon, and whence the practitioner might be enabled to adduce inferences to guide him in his future Practice.

This is the benefit of the Society established in London, termed the London Medical Society (of which I have the honour to be a Fellow), formed and supported by a benevolent grant, and an extensive Library, bequested by the late highly esteemed Dr. Lettsom.

In introducing this subject to the notice of the Public, I trust I shall be excused from any charge of Egotism. I disclaim any motive but that of acting conscientiously in the varied duties of my profession; and if the case with the successful treatment the particulars of which I here submit, should save from an early tomb any one individual, my object will be fully achieved.

It is well known to the Medical Profession of this Colony that we have Bilious Fevers of a Typhoid character, not contagious nor epidemic, in which, with the derangement of the Hepatic Functions, the Brain and Nerves are principally affected, and whence Coma and Delirium close the fatal scene; previous to which the secretions vary from a black Bilious discharge to those of a copper colour—the Pulse constantly irregular and generally below the normal standard.

The cases I have witnessed, and which proved fatal, determined me to pursue another mode of treatment, not formed on any theoretical opinion of my own, but that adduced from the practice of the late eminent Dr. Rush, of Philadelphia, who, after rejecting the inefficacy of bleeding and purging in Bilious Fevers, suspected that death ensued from Stagnation of acrid bile in the Gall Bladder or its adherence to the upper bowels, and which he proposed to evacuate by strong emetics and purgatives, and that the system should be first reduced by bleeding.

The time for exhibiting the emetics should be regulated by the Pulse and other symptoms, and however low, the greater the necessity previous to the discharge of the bile. The cure of the fever should not rest upon a single dose—two doses have been given in a single day, and in one case which he describes, every day for three successive days.

The following is a late illustration of this practice.—

May 30th, 1826, I was called upon early in the morning to call upon a female servant of Mr. Ibbott, of the Old Beach; she had been ill ten days, the attack commencing with violent purging and pains in the bowels, which she attributed to getting wet from the severity of the weather and remaining in her damp clothes for several hours. I learned from the attendant that the purging had ceased on the sixth day after the attack, but the pain continued undiminished, particularly in the right side, until she was obliged to have medical assistance.

On my arrival she was delirious, grinding her teeth, and the jaws fixed, her pulse irritable and weak, with cold shivering without intermission.

I instantly bled her from a large orifice, subtracting quickly a pint and a half of blood. This produced a relaxation of the muscles and improved the symptoms, and an attempt to vomit ensued without effect, but gave me the opportunity to administer a strong emetic—the effect of which was a copious discharge of frothy secretions from the stomach and intestines. At night she had twelve grains of Calomel and an aperient mixture.

In the morning of the 31st she was considerably better, but complained of a want of sleep. She had no pain in the back or head, the tongue was white, dry and encrusted, and the pulse very feeble. In the course of the day she took two purgative powders, each two scruples of the Compound Jalap Powder, which produced copious black Biliary secretions; and at night she had a warm febrifuse mixture. In the morning of the 1st June I was called up at four o'clock and, on visiting my patient, I found her again delirious. She had during the night complained of great pain recurring in the right side, extending over the abdomen; the pulse low, the brain hot, and the tongue dry and white.

I bled her again from the vein until Syncope ensued, after which I gave her half scruple doses of Calomel every four hours and a wine glass of Compound Jalap mixture with Epsom Salts every two hours. With the application of a very large blister over the seat of the pain at night the patient felt relieved.

June 2nd. At 10 o'clock in the morning I visited her. She complained of want of sleep. I repeated the Calomel. At 1 o'clock of the forenoon I was sent for. The delirium had returned, the pulse low and rapidly sinking, the brain excessively hot, with faint shiverings and great difficulty of breathing. Up to this period no change had taken place in the nature of the bilious secretions.

I opened the Temporal Artery and relieved the head of a full pint of blood (arterial) and immediately afterwards exhibited another strong emetic—high bilious, frothy secretions from the stomach and intestines. The symptoms during the night improved and for the first night the patient had tranquil and refreshing sleep.

June 3rd. The patient better, the gums affected by the Calomel, and considerable saliva. Repeated a half scruple of Calomel in the morning and the purgative powder in the evening. This produced a favourable change in the Biliary secretions.

June 4th. The patient continued improving. Exhibited the same medicine as the previous day.

June 5th. Repeated the medicine and changed the diet from barley water and gruel to chicken broth.

The patient is now fast recovering her health; and I am persuaded I owe the success of the case to the use of the emetics which, by specifically acting on the stomach, pylorus and duodenum, discharging the acrid and pent-up bile from the Gall Bladder through the Cystic Ducts, and, having thus removed the cause, the fever ceased.

WILLIAM CROWTHER,
Surgeon.

June 6th, 1826.
Murray Street,
Hobart Town.

Two other reports culled from William Crowther's medical notes give an idea of the methods of treatment in vogue at this period. Two patients, one with erysipelas and the other with ascites, are noted as under.

Erysipelas. Case of Mrs. Lloyd, of Hobart Town, August 1st, 1828.—The face, neck and head suffused and coma approaching, ordered viz.—Ounces 2 Mist Antimona Tartaratum, grains xii in mixture, of which a teaspoon she took every 3-4 hours.

This considerably diminished the inflammation, by copious evacuations by the stomach and intestines.

August 2nd. The symptoms again unfavourable, increasing Pyrexia extending over the left ear and considerable delirium.

V.S. (venesection) AD pints (or lbs.) 2 in two basins.

The first hazy and no serum, with a light pea green hue on the surface of the Crasamentum; the second basin the crasamentum and serum equally proportionate. At night two pill calomel, grains 12. In the morning considerably better; copious Biliary evacuations continued. The cuticle of the face and ear desquamating and in a few days the patient recovered.

N.B.—In this case, by the exhibition of only 12 grains of Calomel after the copious diaphoresis of the Tartar Emetic, a salivation was produced, which continued for several days, and no doubt much help was due to it in the rapid recovery of the case.

Ascites. Mr. Anson. Age not given.—After the exhibition of Cathartics and large doses of opium at night (to the extent of six or seven solid grains, and from 60 to 90 drops of the Tincture), which totally reduced the swelling of the lower extremities and produced good fluidity of the abdomen, I was induced by the solicitations of her friends to tap her, which I did on Sunday night, the 29th October, 1828.

The quantity of the liquid was two gallons and a pint; the colour clear with rather a yellowish tinge; odourless, and in taste a little saltish.

After the operation I gave her 90 drops of the opium.

Hobart Town in the late twenties and early thirties went through one of its many periods of trading expansions and depression, and the need for some arrangements corresponding to our contract practice became manifest. To meet this, a public dispensary became a necessity, and one was established towards the end of 1831.

HOBART TOWN PUBLIC DISPENSARY.

"Knock and it shall be opened unto you."

Patients attended at the Institution since 1st April	60
Patients attended at their homes	21
	81
Total number relieved since the opening, 1st January	259

TO THE PUBLIC.

Ladies and Gentlemen,

Replying to the well known liberality which you have evinced in public acts of benevolence, I beg to submit the following for your attention. In December last, taking into consideration the great difficulty the free poor of Hobart Town experienced in obtaining medical relief, and having been frequently requested by men of worth and credit in the Colony (particularly the Clergy) to found an institution by which the poorer classes who are incompetent of affording the necessary expenses incurred by illness might be relieved, I, in conjunction with Mr. Pearson Rowe, founded the Public Dispensary, which is in every point calculated to answer that end. It was opened on the 1st January with a list of 150 subscribers and nearly 200 members, at a temporary building, erected at our expense in Collins Street, and it is with heartfelt satisfaction I communicate to you that our first efforts were crowned with greater successes than our sanguine expectations could have anticipated, since which period upwards of 200 fit objects of charity have been successfully relieved of disease, at once showing the efficiency of such an Institution. Among this number have been several sufferers from the wreck of the *Hibernia*. Finding, however, from the numerous applications for relief that the machinery of the Institution cannot progress with the regularity and convenience which is so requisite to the welfare of such an establishment for want of larger and more commodious premises, I am induced to call upon a liberal and discerning public and beg your most serious attention in furthering the views of the Directors, by coming forward with their contributions, which may enable me to erect or rent a larger and suitable building as a Dispensary, which, I trust, I shall continue to direct to your satisfaction.

I beg to return my sincere thanks to our present supporters, and I have the honour to be, Ladies and Gentlemen,

Your obedient servant,

William Crowther.

Dispensary,
Collins Street.

[*Hobart Town Courier*, June 7, 1833.]

In 1834 the institution was still in full working order, but of Mr. Robinson, surgeon, who was associated with its working, we hear no more.

The conditions of membership and privileges of subscribers were as shown in this prospectus ("Melville's Almanack", 1834).

HOBART TOWN PUBLIC DISPENSARY AND SICK POOR FRIEND'S SOCIETY.

Established January 1st, 1833.

Under the Direction of William Crowther, Esquire, M.R.C.S., F.L.M.S.

Rules.

(1) That every Member of the Society do pay into the hands of the Secretary the sum of 3s. per month. This sum to be paid one month in advance.

(2) Every Member so paying will receive Advice, Attention and Medicine from this Institution for himself and family and, in the event of any case requiring a consultation with a Physician or any other Members of the Faculty, the Members will not incur any additional expense.

(3) That every Member of this Institution of One Guinea per Annum shall be able to recommend Three objects of charity, of Two Guineas Six, and so forth.

(4) That any Member or Subscriber neglecting to pay his subscription when due be erased from the list.

(5) That any Member desiring to be attended at home give notice to that effect before ten o'clock in the morning, because, in the event of the Surgeon having gone out on his visits, they might lose a day in the benefits of his advice.

(6) That cases of Midwifery cannot be attended on by the Institution.

(7) That every Member do provide the necessary means of conveying the Medicines required.

(8) That all Masters or Owners of vessels will, by paying one guinea on arriving in Port, receive advice and Medicine for their crew during their stay in the Harbour.

(9) That the Clergymen of the Town be Honorary Governors of the Institution.

(10) That a list of the number of cases relieved be published the first Friday in every Month.

John Pearson Rowe,
Honorary Secretary.

To pass for a while from town to country, we find that Lieutenant-Governor Arthur had granted to William Crowther 800 acres in that area of the valley of the Clyde now known as Hollow Tree. This had been surveyed by Mr. Sharland and he had entered into possession. In 1827, thinking to increase his estate, he had paid 10% of the purchase price of another 500 contiguous acres. The following correspondence in the archives of the Land and Survey Offices gives a clue as to the reasons for his taking this step.

Hobart Town,
February 10th, 1827.

Your Excellency,

I beg to inform your Excellency that in the year 1825 I imported the wild grey rabbit into the Colony, from which a considerable stock has increased, so I in consequence solicit an extension of grant to enable me to form a warren. In the event of your Excellency meeting my wishes I beg leave to point out the land adjacent to that originally granted to me.

With every possible respect,

I have the honour to be

WILLIAM CROWTHER.

On this letter the Surveyor-General marked the following memorandum:

I believe there have been refusals to applications for additional land supported by stronger claims than wild rabbits.

The Governor's memorandum, placed below that of the Surveyor-General, was:

That pending the survey no additional land can be granted, and that I am not prepared unconditionally to approve of grants of land for rabbit warrens.

As with so many other pioneer settlers, the survey work was not completed, and later, in spite of a petition from his widow to Sir John Franklin, the land was allotted to a late-comer.

When William Crowther was travelling from his country seat or returning from a visit to a country patient, the following extraordinary incident happened at the King's Head Inn at New Norfolk. The account of an inquest from the *Colonial Times* of April 14, 1826, reads as follows:

To the Public. On the 4th April, 1826, Dr. Crowther came to my house at about half past eight o'clock at night. I was sitting there with Mr. Newby when a knock came to the parlour door. I charged my servant, John Stanning, not to let anybody in until he knew who they were; I told him to put the chain across the door, which he did, and then opened the door to the length of the chain and asked who was there. The voice outside said: "Mr. Crowther." I immediately gave orders to let him in. Dr. Crowther, as soon as he came in, took me by the hand and said: "Mr. Abel, I am glad to see you so guarded against bushrangers." He then called for supper, and all he had to drink with his supper was one glass of beer. He said he had rode a number of miles that day and said he was rather chilly and requested to withdraw into another room, where there was a fire. I accompanied him. As soon as we entered the room, Mr. Crowther, being a strange gentleman to Mr. Manby, Mr. Manby said: "Mr. Abel, I will retire." I then took a candle and showed him to his bed and returned to Mr. Crowther. The family were all in bed, also my servants, except John Stanning, the waiter. Mr. Crowther said: "Mr. Abel, I think we can take half a pint of brandy before we retire." We sat talking until nearly a quarter past ten, when a knock came to the dark passage door. I never rose from my seat until my servant, John Stanning, called out: "Here they are." Mr. Crowther rose from his seat immediately and entered into the passage. I rose at the same time and went into the parlour, took up my fowling piece and went to the assistance of Dr. Crowther. When I came to the parlour door, being the length of a room from the passage, I saw Dr. Crowther laying on the floor, as I thought a corpse, I immediately, with my piece upon a charge, drawing around the end of the table. I knew I had left nobody in the room but Dr. Crowther and John Stanning, who were both dressed in dark clothes. I saw the shadow of a man in white in the dark part of the passage. I immediately fired, threw down my piece and went for my second. Mrs. Abel being in bed, I had to go into the bedroom for it, and on my return, cocking my pistol as I came, I was surprised by my son George just as I was in the act of firing at a man outside dressed in white by saying: "Oh, Father, you have shot my brother Henry." I then proceeded to the passage. I could not believe that it was my son, thinking he was in bed. I found out my mistake, found it to be my son, and found him to be dead. I asked John Stanning which way he made his entrance, as I saw the bar upon the door, and he said: "Through the opening for the fanlight." I said: "Oh, you scoundrel, you knew him to be my son." He said he did not. I asked him also the next day if he ever knew my son to come through the opening of that fanlight before, and he said: "No."

(*Signed*) WILLIAM ABEL, Snr.

New Norfolk,
April 9th, 1826.

Verdict returned by the coroner's inquest: Excusable homicide.

So through the years, on his grey horse and on foot, he pursued the routine of general practice in this colony. One by one the diseases of the old world found their way into the community. The first mention of measles, for instance, indicates that doubt had been cast on the correctness of his diagnosis and evoked this reply in the *Hobart Town Courier* of January 23, 1835:

Sir: In consequence of the doubt which a paragraph in the last number of the *Tasmanian Review*, relative to the prevailing eruptive disease, seems to imply, I consider it necessary to inform you that I have invited Dr. Bedford and other members of the faculty to visit the cases of measles now under my medical treatment, and they unanimously concur with the diagnosis I have formed of the disease. It would appear that from the connection of families all those through which the contagion has spread have come under my care, and therefore the author of the information in "The Tasmanian" has not perhaps had the opportunity of witnessing them. At the same time I have the satisfaction of reporting that such is the mild character of the cases hitherto that, though considerably increased in number since yesterday, they are not calculated to excite alarm.

WILLIAM CROWTHER,
Surgeon.

This epidemic, however, as in the case of an outbreak of pertussis, did not continue in so mild a course, and there was considerable mortality before it subsided.

The two children growing up were placed, Elizabeth at Mrs. Clarke's famous school, "Ellenthorp Hall", near Ross, and William at Mr. Claiborn's Academy at Longford. Their father, in an advertisement, states that on his ride from one end of the island to the other, taking them to their respective schools, intending patients may consult him *en route*.

The following extracts from three newspapers during these years are interesting, showing as they do, first, that a tendency towards mutual protection and cooperation was arising within the ranks of the medical practitioners of this colony and, secondly, for the light they throw on the attitudes adopted by the general public, coroners and medical men towards inquests and inquiries into deaths by violence and natural causes.

The following extract is from the *Hobart Town Courier* of Saturday, May 17, 1828:

Sir: A cessation having apparently taken place of the late medical correspondence, which had assumed a tone and comprehended subjects certainly perfectly foreign to that in which it might be supposed to have originated, perhaps I might be permitted to address a few lines to you solely in reference to the plain fact, which alone interests me, whether or not as a medical man my practice has been judicious in a certain recent instance.

In order to do this, I consider the shortest method of vindicating myself will be to make the following extract from a document with which I have been furnished by six medical men, certainly with much professional respectability, after the minutest investigation of the case. The parts omitted are, as to the particulars of the case, unnecessary to come before the public.

> We, the undersigned, have fully and dispassionately examined into the case of midwifery (stated) and in consideration of the peculiar circumstances under which you are placed, we conceive that your prompt and decisive treatment merits our entire approbation and reflects great credit on your professional skill and ability.
>
> We are, Sir, etc.,
>
> J. Scott, R.N., Colonial Surgeon
> H. J. Brock, M.D. (Edin.), Surgeon, R.N.
> W. Seccombe, Colonial Asst. Surgeon.
> J. Spence, Colonial Asst. Surgeon.
> J. Griffiths, Surgeon.
>
> To Mr. Assistant Surgeon Garratt, Sorell.
>
> I have learnt every particular of a recent midwifery case attended by Dr. Garratt, and from a very long course of practice I am enabled to certify that the most judicious and proper treatment was exercised towards the patient with the most happy success and reflects great credit on the practitioner.
>
> William Crowther.

Similar expressions of approbation have been conveyed to me in this case from J. Moxy, Esq., M.D. and Surgeon of H.M.S. *Rainbow*.

I am, etc.,

R. Garratt, Colonial Asst. Surgeon.

Sorell,
May 8th, 1828.

The following is from the *Hobart Town Courier*:

Richmond,
September 27th, 1828.

An inquest was this day held on the body of George Walton, who about four weeks since was wounded by the accidental discharge of a gun in the hand of our worthy Police Magistrate, when passing through a wattle bush in pursuit of two men supposed at the time to be bushrangers. The ball, striking and wounding the gentleman's foot, bounded and passed through the man's thigh. Walton was attended by Surgeon Garratt, under whose skilful aid he was fast recovering, being not only able in a few days to sit up, but to walk with the assistance of a man who attended him. In a week or eight days, however, he was attacked by a disease which terminated his existence yesterday morning.

Dr. Murdock, with Surgeons Crowther and Garratt, opened the body, and after a minute inspection were enabled to depose that George Walton did not come by his death from the gunshot wounds, the ball having passed through the thigh without in the smallest degree injuring any vital part, but that a diseased liver and intestines, altogether with the effects of hard drinking of ardent spirits, was the actual cause of his death.

The jury, after a long and strict investigation and a pertinent charge from the Coroner (James Gordon, Esq.), returned a verdict: Died by the visitation of God.

The following is an extract from the medical report on the case:

On opening the abdomen, intensive inflammation presented itself, the stomach, with the whole of the intestines, having assumed a livid character, while the liver and spleen had by previous diseases been totally altered in their structure, both breaking down under the pressure of the fingers.

The accident of the gunshot wound did not therefore cause the death of George Walton, no vital parts having been injured and the length of time lapsing from the injury until the commencement of the secondary fever, and which terminated by general erysipelatous inflammation arising from a diseased liver and spleen.

James Murdock, M.D.
Robert Garratt, A.C.S.
September 27th, 1828. Wm. Crowther, Surgeon.

The following is an extract from *The Hobart Town Magazine*, 1833:

An inquest was held on Saturday, the 25th instant, at Mr. Williamson's, spirit dealer, Elizabeth Street, on the body of Mr. James Gow, hosier, residing in the same street, who was found dead in his bed on the morning of that day. On our reporter entering the room, which was at three o'clock (the time appointed for the inquest), a number of respectable shopkeepers were present, who, after some time had elapsed, evinced a great deal of uneasiness at the absence of Mr. Moore, the Coroner, observing that he was paid for his attendance and ought to be punctual, whereas they were tradesmen and could not be withheld from their business. At twenty-three minutes past three they unanimously agreed to separate, and, on entering the street, they were met by the Coroner, who said that the cause of his absence was owing to his having to make some necessary inquiry connected with the business for which they were summoned. Some of the gentlemen retired, while others reentered the room, and after a short time had elapsed, a sufficient number being then present, they were sworn and retired to view the body. On again entering the room wherein the inquest was to be held, Mr. James Caldwell was sworn, who stated that he had been on terms of intimacy with the deceased, that scarcely a day passed when he did not see him, and that he had been in the deceased's shop on the previous evening, between eight and nine o'clock, conversing with him, and he appeared quite healthy and cheerful; he had known him to complain of a pain across his chest about three months previously, but not latterly; then he had sent home a considerable sum of money by his wife, who sailed in the *Lavinia*; and that he laboured under no pecuniary embarrassment. John Birch, who knew the deceased since witness came to the Colony, which was in December last, thought he was rather depressed in spirits since his wife went home, but to no great extent, but had never heard him complain of illness; slept in deceased's house the last three nights past; on the previous night supped with him; they had some cold mutton, bread and a bottle of porter; they had no spirits. The deceased ate heartily and complained of no illness; he retired to bed at 11 o'clock. Witness rapped at his bedroom next morning and received no answer. In about ten minutes he rapped again and all was silent. He became alarmed and sent in the servant woman, who screamed on entering the bedroom. He then called in Mr. Mill, the apothecary, who declared him to be dead. The body was still warm. Mr. Crowther, who examined the body after it had been examined by the Jury, stated that he was surgeon to the deceased; that on viewing the brain it appeared to be in an unhealthy

state; and that there was water on the right and left side of the chest, and the heart of the deceased was enlarged—it was twice its natural size—and that he was of the opinion that deceased came by his death from serous apoplexy produced by an enlargement of the heart. The Coroner having summed up the evidence, the Jury found: "That deceased died by the visitation of God, from serous apoplexy."

I fear, however, that I have gone too long and will cut down this narrative.

The year 1837 saw my grandfather, hitherto an apprentice, taken into full partnership with his father and the giving up of the dispensary in Liverpool Street. The new place of residence was at the corner of Murray and Collins Streets, where they confined themselves to the general practice of medicine and surgery.

At some future time I hope to speak of the refusal of the government to allow my grandfather and other "native youths" to be admitted as students to the Colonial Hospital; also of William Crowther's long and able address in 1835 to the Legislative Council urging that this restriction be removed and the institution be used as a teaching school for medicine. With his son in partnership and a consequent lessening of the demand on his time, he was enabled to enter into new fields of interest.

Widely read and with extensive knowledge of the humanities, he was also interested in natural history and geology. This knowledge was of use to him when he lectured twice on geology and a third time on education during 1837 before the Mechanics' Institution at Hobart Town, the only scientific society here at that date and the forerunner of the Royal Society of Tasmania.

Alas, the geology was simply a study of that of the Old World, with no mention of the wonderful field as yet unworked all around him.

He also took a prominent part in July of the same year in the formation of an Association for the Preservation of Native Game of the Colony. Here, too, it may be mentioned that among his effects at the sale of his estate after his death was a pheasant house. This is the first mention I remember having seen of the importation of these birds into Van Diemen's Land.

My grandfather, leaving Van Diemen's Land by the *Emu* on February 24, 1837, to enter Saint Thomas's Hospital, was fated not to see his father again. Worn out by sixteen years of toil and strife, the latter was a victim of a very serious accident on the road near Pontville when returning from visiting a patient at the Broadmarsh. As the *True Colonist* puts it:

> In consequence of the darkness of the night and the road being carelessly left by the men with large unbroken stones, his horse fell on them with such prodigious force as to pitch upon his head, throwing Dr. Crowther with a violence which caused him considerable injury, from bodily contusions, severe lacerations of the integuments of the face and fracture of the left maxillary bone. Such were the effects of the fall from swelling of the head that it was an entire week before it was possible to set the bone. The practice of placing large stones and logs on parts of the high road in order to compel vehicles to travel over the mended parts is, we think, very unnecessary and is indisputably dangerous . . . .

From this accident he never really recovered, dying some fifteen months later, on Christmas Day, 1839, at his country residence, "Sans Souci", his age being fifty-one years.

The practice was carried on by Mr. Mill, surgeon, until the return from England of W. L. Crowther in 1841, and since by his descendants. Two of the latter, the Honourable W. L. Crowther, F.R.C.S., and Senator the Honourable J. B. Hayes, C.M.G., have held office as Premier of the island.

It is not for me to attempt to appraise the quality and value of his work for sixteen years in this infant colony. He bore a modest but substantial part in the development here of the medical profession and of its ethics.

Today, one hundred and ten years after his landing in Van Diemen's Land, I offer this address as my tribute to his memory. Is it too much to say that the great prestige that has been given in the past and is still accorded to the medical profession in Tasmania, is due largely to the tradition of service and integrity handed down by such pioneers?

His tombstone in old Saint David's Cemetery bears this epitaph: "Not ignorant of evil himself, he learned to pity the wretched."

BACILLARY DYSENTERY IN ROCKHAMPTON, WITH AN ACCOUNT OF THE DISTRIBUTION AND TYPE OF BACILLARY DYSENTERY IN OTHER STATES.

By E. A. North, M.B., B.S.,
Medical Officer in Charge, Commonwealth Health Laboratory, Rockhampton.

Within recent years a considerable amount of work has been done in Australia in connexion with bacillary dysentery. In particular, bacteriological findings have shown that the majority of cases of "summer diarrhœa" and acute gastro-enteritis in infants and young children, with blood and mucus in the stool, are really cases of bacillary dysentery. In Melbourne, in a series of cases during the summer 1923-1924 and 1924-1925, R. Webster and F. E. Williams[1] found dysentery bacilli in a large number of cases. Of 121 strains isolated, *Bacillus dysenteriæ* Flexner was the organism in all but nine, these latter strains being Sonne's bacillus. They conclude that *Bacillus dysenteriæ* Shiga is a negligible factor in infantile dysentery in Melbourne. During the summer 1910-1913 Forsyth[2] found dysentery bacilli in 33% of over 300 cases of diarrhœa, and Patterson and Williams[2] in Melbourne have shown the frequency with which dysentery bacilli are recovered from the stools of children with epidemic diarrhœa. Also working in Melbourne, Burnett, McKie and Wood[3] found that the infecting organism in the majority of cases of infantile dysentery was a Flexner strain, usually of type *W*. This is in accord with the findings of Webster and Williams. McKie and Burnett,[4]

in a paper published in 1932, describe two small groups of atypical Flexner bacilli found in cases of infantile dysentery, which they have named *U* and *T* races. T. W. Nelson,[5] working separately on the bacteriology of the same series of cases, also investigated these *T* strains, which were found to differ from other Flexner bacilli in being slow dulcite fermenters.

From Sydney, E. M. Little,[6] working in conjunction with Marjorie Ross during the summer months of 1921-1922, records the finding of *Bacillus dysenteriæ* in 29 cases of gastro-enteritis (Flexner type in 24 and Shiga in 5; all of the latter, that is, Shiga, patients died). In a paper published in 1932, Margaret Harper[7] refers to other workers in the same field and gives details of the bacteriological findings in 356 cases of epidemic diarrhœa in infants and young children. Dysentery bacilli were recovered from 69 cases, and members of the Salmonella group in 137 cases, while from the remainder only lactose-fermenters were grown. Thirty-two of the dysentery cases were diagnosed clinically as such, whilst 16 could not be distinguished symptomatically or by the character of the stools from the other groups.

F. H. Beare[8] during 1921 and 1922 in Adelaide found that in a series of 207 infants and young children with diarrhœa, 38% were suffering from what was clinically bacillary dysentery. The diagnosis was confirmed bacteriologically in most instances. The organism isolated in every instance but one was *Bacillus dysenteriæ* Flexner, the single exception being Sonne's bacillus.

All the above-mentioned records clearly demonstrate what an important part dysentery bacilli play in infantile diarrhœa in large cities in Australia. It has been shown further that in Victoria and South Australia the Shiga type is not concerned in infantile dysentery, whilst in Sydney, although not as often found as the Flexner type, it is of importance. Bacillary dysentery in adults has not been quite so fully studied, mainly perhaps because few patients are sufficiently ill to warrant admission to hospital. Institutions such as mental hospitals, where dysentery is so liable to occur, offer an opportunity, however, for such study, and E. T. Hilliard[9] reported on such an epidemic in a New South Wales mental hospital. He isolated bacilli in 70% of acute cases (Shiga 10%, Flexner 30%, Flexner *Y* 30%). Shearman,[10] writing in 1923, records several cases of bacillary dysentery in Western Australia in 1920, 1921 and 1922 following compulsory notification. A big proportion were cases of asylum dysentery and seven were confirmed bacteriologically (Flexner 6, Strong 1). Recently, from Mont Park in Victoria, Farran-Ridge and Dora Lush[11] reported the bacteriological findings in asylum dysentery there, the organism incriminated being *Bacillus dysenteriæ* (Sonne and Flexner *Y*).

Some years ago Patterson and Williams,[12] in Melbourne, recovered Flexner dysentery bacilli from a large proportion of cases of epidemic diarrhœa in adults.

That bacillary dysentery has a wide distribution in Australia amongst adults, as well as amongst children and infants, is evident from the work quoted above. Further, it would appear that the prevailing type in Australia is the Flexner group. In Victoria, at least where the serological races have been studied by absorption tests, the *W* race of Flexner bacilli is the commonest. In Queensland bacillary dysentery is notifiable only at Thursday Island, which has suffered from severe epidemics of dysentery on several occasions. In view of the fact that this State is wholly tropical and subtropical, one would have thought that much would have been written concerning bacillary dysentery here. A fairly extensive search through the literature from 1920 onwards, however, failed to reveal any reference to the subject. It was therefore thought that a brief description of an epidemic (although a small one perhaps) of bacillary dysentery in Rockhampton would prove of interest, particularly from the bacteriological aspect, and also because both children and adults were involved.

The Rockhampton Cases.

Early in December, 1934, it came to my knowledge that cases, clinically bacillary dysentery, were occurring in Rockhampton, as there was a demand for antidysenteric serum from some of the private practitioners. Laboratory aid in the diagnosis of patients treated privately was not sought, but I have been informed that quite a number of such patients were seen. Some practitioners used serum, others did not, so I am unable to estimate the number of cases. On December 9 a child, N.E., was admitted to the Rockhampton General Hospital with a history of diarrhœa and vomiting, and clinically was very ill. She died thirty-six hours after admission, and the same day (December 11, 1934) a brother (K.E., Case I) was admitted with similar symptoms. In view of the fatal outcome of his sister's illness, specimens from stools of this patient and from subsequent admissions were forwarded to the laboratory for bacteriological examination. From December 11, 1934, to January 7, 1935, specimens from nine cases suggestive of dysentery were received from the hospital, and from seven of these dysentery bacilli were isolated. Table I shows the sex, age and outcome in these seven bacteriologically proved cases.

Table I.

Case Number.	Initials.	Sex.	Age.	Outcome.
			Years.	
1	K.E.	M.	5	Recovery.
2	K.H.	M.	4	Recovery.
3	P.T.	M.	2	Left hospital at own risk.
4	J.H.	M.	6	Recovery.
5	M.S.	M.	52	Still in hospital (February 27, 1935) with peripheral neuritis as a sequela.
6	P.M.M.	F.	2	Rapidly fatal.
7	S.J.T.	M.	45	Recovery.

Brief clinical histories of Cases IV, VI and VII, as representative of fatal and non-fatal cases in children and an adult case, are given.

CASE IV.—J.H., a male, aged six years, was admitted to Rockhampton General Hospital on December 17, 1934, with a history of diarrhœa and vomiting for three days. On examination the child did not appear very ill. Temperature was 37·8° C. (100° F.) and the pulse rate was 100. The stools contained blood and mucus, and at first were very frequent. Treatment consisted in administration of antidysenteric serum, rice and barley water by mouth, and colonic lavage. The stools became free of blood and mucus on December 24, 1934, and the child was discharged from hospital as cured on January 28, 1935.

CASE VI.—P.M.M., a female, aged two years, was admitted to the Rockhampton General Hospital at 6 a.m. on January 2, 1935, with a history of vomiting for three hours. There was little diarrhœa. On examination the child was found to be markedly toxæmic; the temperature was 39·1° C. (102·4° F.); the pulse rate was 144. The bowel was washed out and the contents were found to consist of undigested food, no blood or mucus being present. A later motion showed specks of blood. In spite of intensive treatment the child died twelve hours after admission to hospital of acute toxæmia, without showing any dehydration. An autopsy revealed a normal gastro-intestinal canal as far as the caecum. The mucous membrane of the whole of the large intestine from the caecum to the rectum was of a dark plum colour without ulceration or necrosis, and the contents of the colon looked like thick creamy pus. There was enlargement of glands all along the mesentery. The remaining organs appeared normal. Portions of the ileum, large intestine and enlarged glands were taken for cultural purposes. An almost pure culture of Flexner dysentery bacilli was obtained from the wall of the large intestine. No pathogenic organisms were recovered from the small intestine or lymph glands.

CASE VII.—S.J.T., a male, aged forty-five years, was admitted to the Rockhampton General Hospital on January 5, 1935, complaining of sudden onset of abdominal pain, vomiting and diarrhœa since midnight on January 4, 1935, since when the evacuations had been almost continuous. Examination showed that the abdomen moved freely. There was generalized tenderness, mainly over the right upper part, but no rigidity. The stools contained blood and mucus. The temperature on admission was 37·3° C. (99·2° F.) and the pulse rate 88. The patient at first felt and looked very ill. Blood was present in the stool on January 12, 1935, for the last time, and the patient was discharged from hospital, cured, on January 23, 1935.

Bacteriological Findings.

With the exception of Case I, one sample only was examined from each patient. Direct plating of a fragment of blood-stained mucus was made on McConkey medium immediately on receipt of the specimen. The following day colourless colonies were picked off and agar slopes inoculated. Subsequently the staining properties, morphology, motility and action on a limited number of sugars were studied. Finally the agglutinability of the bacilli by stock agglutinating sera for *Bacillus dysenteriæ* Shiga, *Bacillus dysenteriæ* Flexner and *Bacillus dysenteriæ* Flexner *Y* was investigated. The organisms in each of the seven cases showed the following characteristics. They were Gram-negative, non-motile bacilli, which fermented glucose and mannite without gas formation. Lactose, maltose and saccharose were not fermented. The above characteristics are those of dysentery bacilli of the Flexner *Y* group, and this was confirmed by the agglutination tests, suspensions of the bacilli being agglutinated by stock Flexner and Flexner *Y* agglutinating sera to about 10% or more of their titre. No agglutination took place with Shiga agglutinating serum.

Cultures of the first three strains isolated were forwarded to the Commonwealth Serum Laboratories, Melbourne, for more detailed study. They were examined and reported on by Dr. W. T. Nelson as follows:

On examination here the cultures were found to consist of non-motile Gram-negative bacilli fermenting glucose and mannite without gas and failing to ferment lactose, dulcite and rhamnose. They formed indol. These reactions are those of the Flexner type of dysentery bacilli. On agglutination tests with monovalent Flexner agglutinating sera they reacted as follows:

Against *V* serum: agglutination $^1/_{640}$ or 25% of titre.
Against *W* serum: agglutination $^1/_{2560}$ or 100% of titre.
Against *X* serum: agglutination less than 10% of titre.
Against *Y* serum: agglutination $^1/_{1280}$ or 25% of titre.
Against *Z* serum: agglutination $^1/_{320}$ or 10% of titre.

It may therefore be concluded that the three cultures are all examples of the *W* type of Flexner dysentery bacilli.

Agglutinins for the organisms isolated were searched for in the sera of the two adult cases. The findings are shown in Table II.

TABLE. II

Bacillary Emulsion of Organism from	Date Organism Isolated.	Date Both Sera Collected.	Titre of Serum Case 5.	Titre of Serum Case 7.
Case 5	28/12/34	11/1/35	1/80+	1/320+
Case 7	7/ 1/35	11/1/35	1/40+	1/640+

Summary and Conclusions.

1. The literature of recent years concerning the bacteriology of bacillary dysentery in Australia is reviewed.

2. A recent small epidemic in Rockhampton, together with the bacteriological findings, is recorded.

3. The type of organism associated with the Rockhampton cases is the type predominating in other States, namely, *Bacillus dysenteriæ* Flexner. Further, it belongs to the serological race *W*, which is the prevailing type found in infantile dysentery in Melbourne.

Acknowledgements.

I desire to thank Dr. P. Mitchell, Chief Quarantine Officer (General), Brisbane, and Dr. W. C. Sawers, of the School of Public Health and Tropical Medicine, Sydney, for their interest and help.

The bulk of the laboratory work was carried out by Mr. K. Brushfield, and to him I am greatly indebted.

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SURGICAL SHOCK: SOME NOTES ON CAUSATION AND TREATMENT.[1]

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It is now some years since Cannon advanced the theory that surgical shock may be a condition secondary to the absorption of histamine-like bodies from damaged tissues. This theory was supported by experimental work, in which he crushed the muscles of the hind limb of an animal and produced a profound fall in blood pressure comparable with shock. This effect was not at all altered by division of the nerves of the limb, but if the venous return were blocked by clamps, the blood pressure fall did not occur until after the removal of the clamps. Such results strongly suggested that some poisonous depressor substance was liberated in the damaged tissue. The chemical nature of the substance was in doubt, but it was thought that as histamine is a product of tissue damage and has a similar depressor effect, it was probably of this nature.

More recently O'Shaughnessy and Slome, working at the Buckston Brown Institute of the Royal College of Surgeons, have obtained results entirely at variance with this work, and it is their opinion that surgical shock is due solely to nociceptive nervous stimuli, combined with local fluid loss in the area of trauma. It has not been possible to say which of these two factors is the dominant, but they suggest that the nociceptive stimuli are of the greater importance.

As is so often the case, experimental surgery on animals tells less than the whole truth when applied to human beings, for in this instance it can take no account of that most important human factor, the psychological attitude of the patient.

The importance of this psychical factor may be demonstrated by making blood pressure readings on a series of patients operated on under local anæsthesia. It will then often be found that considerable drops in pressure occur when there has been no other shock-producing factor at work.

The chief concern of surgeons is, of course, the prevention and treatment of shock during and after operations and after accidents. Many a brilliant or fatiguing operation is followed by death from shock.

[1] An abstract of a paper read at a meeting of the staff of Saint Vincent's Hospital, Sydney.

In dealing with the prevention and treatment of shock during operation one could not do better than study the methods used to this end in the field of modern intracranial surgery, for in this most shock-producing field of surgery, the problem has been very satisfactorily grappled with.

All are familiar with the disastrous results which are apt to follow intracranial operations performed according to standard surgical techniques. It has now been made abundantly clear that these results are avoidable if other lines of action are followed. These patients are often very feeble or troublesome, and the operations, long and exhausting as they are, frequently reduce the patient to the last trenches of his vitality. Modern methods which can avoid disaster in these circumstances are then well worth studying as being worthy of a general application in surgery. In combating difficulties the first factor to be considered is the patient's mental state. Many are phlegmatic, either by temperament or as the result of their disease. Others are apprehensive or uncooperative. For the latter class local anæsthesia should not be used. There are but few forms of preliminary medication that can be relied upon to keep such patients happy or cooperative; morphine and scopolamine being the best. Other drugs commonly used often make the patient worse than ever and result in a procedure which may be exhausting and unsatisfactory for all concerned. The ward sister is probably the best informant as to the patient's outlook. If apprehension is recognized, then local anæsthesia is not to be used, and it is advisable to give some premedication prior to the removal to the operating theatre. A long, apprehensive wait before being operated on is also to be avoided. The experienced nurse likes her bad case to be placed first on the operating list.

Regarding general anæsthesia, there can be little doubt that in long operations not requiring relaxation, a combination of gas and oxygen is the ideal anæsthetic. This may be administered for many hours without any ill effects. The quantity used may be greatly reduced by the administration of a small dose of "Avertin".

Regarding the points of importance in operative technique, every surgeon knows the importance of gentleness of handling tissues and minimization of blood loss. There are, however, a few very important points which general surgery might learn from neuro-surgical techniques. The first is that time does not matter. The surgeon who sets out to remove an intracranial tumour with his eye on the clock is courting disaster, as he is also in other branches of surgery. In brain surgery the point of prime importance is the meticulous prevention of hæmorrhage, and a great part of the fastidious technique is designed to this end. At the end of the ordinary bone flap opening or posterior fossa exposure the drapings should not be stained by blood and the initial blood pressure and pulse should be unchanged. Only in dealing with certain highly vascular tumours does this become impossible.

When ordinary techniques are used for these operations, the patient is often exsanguinated and seriously shocked before the tumour is exposed; it is therefore not surprising that he often dies before it is removed. Shock occurring during the course of such an operation is dealt with by the free use of saline solution. This may be administered either as a continuous rectal or submammary infusion. If during the operation the patient's condition seriously falls off, a rather curious action is taken. The operation is immediately stopped and the members of the operating team take it in turns to rest. In this way half an hour or more may be spent, during which time saline injections and blood are administered to the patient. At the end of this interval it is usual to find sufficient recovery to allow completion of the operation or, at worst, the careful and slow closure which is so essential. This method of letting the patient get his "second wind" is quite the reverse of the usual practice of hurriedly completing the operation and hurrying the patient out of the theatre, which may avoid a coronial inquiry, but will precipitate a death. It is probable that this delay introduced in any condition of operative shock would have happy effects.

The next important point which cannot be too strongly stressed in the treatment of any shock is the avoidance of movement. It is the invariable practice when doing brain surgery not to move or in any way disturb the patient at the end of an operation until the state of consciousness, blood pressure and pulse are satisfactory. This may take several hours, during which time the patient lies in the position maintained during the operation. When it is decided to move him, the bed is wheeled into the theatre and he is very gently lifted in one movement from the table to the bed.

All are familiar with the drastic collapse which often follows on the sudden change of position in the abomino-perineal resection of the rectum, or the disaster which may follow the long trolly ride from operating theatre to ward. This short interregnum, under the presidency of the trolly attendants, between the theatre and ward is often a death-dealing period. The same principle is no doubt applicable to street accidents, in that the longer the severely shocked patient is left lying in the road (within likely limits), the better. The hasty arrival of the ambulance is not always an unmixed blessing.

In many hospitals, owing to lack of space, it is impracticable to keep a patient indefinitely on the operating table, and passages and lifts are so constructed that beds may not be brought to the theatre. The only satisfactory way of dealing with this state of affairs is the incorporation in the actual operating suite of a small shock room into which the table may be wheeled at the end of the operation, and left undisturbed until recovery is satisfactory. It should be possible to keep this room very warm, and in it infusions of blood and saline solution injections may be conveniently administered. By careful adherence to these details it is often possible to avoid altogether the appearance of shock, but neglect of these principles is only too apt to be followed by disaster.

In dealing with the treatment of established shock it is advisable to consider the physiology of the condition, so far as it is understood. Primarily there occurs a widespread vaso-dilatation with capillary stasis and marked fall in blood pressure. A loss of fluid from the blood then occurs and there is a resultant oligæmia with increased viscosity of the blood. This results in a lessened venous return to the heart and consequently a diminished cardiac output. There follows a further phase of tissue malnutrition, and it is likely that the resultant accumulation of metabolites in the tissue spaces leads to further loss of fluid from blood vessels to tissue spaces and the establishment of a vicious circle.

Endeavours to remedy this may be made in different ways. Cardiac stimulants are ineffectual. Pituitrin, acting as a capillary contractor, is usually of little use in shock conditions and may cause only a transitory improvement.

To some extent the return of blood to the heart may be improved by the head-down posture and by bandaging the limbs, but the most readily controllable factor is the quantity of fluid in the vessels. In mild degrees of shock this is well done by the rectal or submammary infusion of saline solution. This is slowly absorbed and slowly excreted. Short intravenous infusions are rapidly excreted and are of no value. If there has been some element of hæmorrhage, blood transfusion is the ideal method.

Probably the most effective method of treatment, and one which is entirely rational, is the slow and continuous intravenous infusion of saline solution. This may easily be done by the introduction of a needle or small cannula into a vein, where it may be fixed by strapping or a stitch through the skin. The limb should then be comfortably immobilized with a pillow and the saline solution allowed to flow indefinitely. The usual rate is about five cubic centimetres per minute. This may be kept up for several days if necessary, and 5% glucose solution may be conveniently added to the saline solution. A frequent difficulty caused by clotting of the blood in the needle may be obviated by using a needle of rather small bore, in this way a more rapid flow through the needle being assured. There can be no doubt as to the efficacy of this form of treatment.

In effectively combating shock, then, it would appear that in addition to the ordinary precautions against loss of blood and damage to tissue, we should give more careful consideration to the beneficial effects of temporary cessation of operation and, if necessary, prolonged immobility on the table, and then the most gentle movement back to bed. Lastly, and not least important, we should never embark on a serious operation without having everything in train for a blood transfusion to be given at a few minutes' notice, and saline solution for continuous intravenous injections should always be to hand.

BOVINE TUBERCULOSIS IN BOVINES.[1]

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The work done by Penfold and Webster on material obtained from the Children's Hospital, Melbourne, has shown clearly that bovine tuberculosis is fairly prevalent in Melbourne children. The infection of the child, as of the young bovine, takes place almost entirely from infected milk, so that removal of tuberculous cattle from our dairy herds is an important step in the prevention of bovine tuberculosis in children.

To encourage owners to eradicate tuberculosis from their herds in Victoria, a *Cattle Compensation Act* was passed in 1924 and a fund formed. Owners were then in a position to have their herds tested by means of tuberculin tests; reactors were slaughtered and compensation was paid for them.

In this paper a review of the tuberculin testing in Victorian herds from 1921 to 1935 will be given, and the influence of the work done towards the eradication of this disease from cattle will be discussed.

Bovines are readily infected by way of the respiratory or alimentary tract, while miliary tuberculosis may arise in them after alimentary or respiratory ingestion of the organisms. Tuberculosis of the udder occurs secondarily to either the respiratory or alimentary type of tuberculosis, and if the lesion in the udder is open, that is to say, if there is a direct communication between the tuberculous focus and the ducts of the udder, then naturally the milk becomes heavily infected and is highly dangerous to children and calves. Apart, however, from tuberculosis of the udder, it has been shown that the *Bacillus tuberculosis* is able to pass into the milk, though the lesion from which it comes is in a part of the body remote from the udder. Tuberculous mastitis is not always readily recognizable by clinical methods and attempts to safeguard the milk supply by removing only animals which suffer from clinical tuberculous mastitis are unsatisfactory. The alimentary type of the disease is that most commonly affecting young calves. One would expect this, since the infection arises through feeding them with infected milk. The lesions produced and their distribution are exactly similar to those so commonly found in children.

Ample evidence exists to show the high infectivity of tuberculous milk and similarly the high susceptibility of young animals to this milk, so that no apology is required for laying before the medical profession an account of the efforts that have been made in Victoria to reduce the incidence of bovine tuberculosis in our dairy cattle. Before dealing with the details of the work, however, one would like to call attention to the vagueness of the description of milk supposed to be free from tuberculous infection. It is commonly described as "T.B. tested milk". This is generally taken to mean milk from cattle which have failed to react to tuberculin; it might, however, be applied to milk from animals clinically examined by a dairy supervisor or veterinary surgeon. Clinically tuberculous mastitis of bovines cannot be detected, in many cases, before the disease is well established and tubercle bacilli are passing into the milk. Milk from animals tested by clinical means only could be heavily infected with tubercle bacilli and still be described under present standards, truthfully, as "T.B. tested milk". Furthermore, the possibility exists that the milk itself may be tested from time to time by inoculating sediment derived from it into guinea-pigs, which latter have failed to develop tuberculosis, or by examining, with negative results, smears of milk microscopically. Owing to the uncertainty of the meaning of this designation "T.B. tested milk", it would be very difficult to prove that anyone had sold milk not of the substance and quality demanded by the purchasers. It is readily seen from the above how easily milk from animals, untested in any way for tuberculosis, can be represented and sold as milk from cattle free from tuberculous infection. The vendor at present runs little risk of detection and less of punishment for this deception.

For public protection two grades of milk, in respect of tuberculous infection, should be recognized: the one, milk obtained only from tuberculin tested cattle, could be known as "T.T.C." milk; the other, milk from cows untested by the tuberculin test, ordinary milk. Cattle producing "T.T.C." milk would need to be tested with tuberculin at yearly intervals.

Table I.

Personal Records of Tuberculin Testing in Herds showing the Highest Percentages of Tuberculous Animals.

Herd.	Number Tested.	Reactors.	Approximate Percentage.	Miles from Melbourne.	Relative Acreage.
1	47	25	53	8	Moderate.
2	47	19	40	24	Moderate.
3	99	34	34	28	Small.
4	37	13	35	40	Fair.
5	70	26	37	33	Fair.
6	105	34	32	200	Very large.
7	89	23	26	8	Small.
8	76	20	26	200	Large.
9	79	19	24	100	Large.
10	64	12	19	100	Large.
11	17	8	45	20	Small.
12	24	6	25	20	Small.

Figures representing the testing of 12,097 cattle during the period 1923-1935 were examined for each herd individually; the ten herds having the highest percentage of reactors in these cattle are represented in Table I, numbers 1 to 10. Herds with only a few animals, although included in Table IV (personal figures for tuberculin testing carried out in 1923-1935) were, on account of their smallness, not considered eligible for Table I.

Incidents which arose while or through testing the herds shown in Table I will be mentioned. They throw light on some conditions affecting the spread

[1] Read at a meeting of the Australian and New Zealand Association for the Advancement of Science, Melbourne, January, 1935.

of tuberculosis through herds, or other matters discussed in this paper.

Herd Number 3.—The figures given here were obtained in 1929; testing has been carried out periodically since then. On the occasion of the last two yearly tests (1933 and 1934) no reactors were present. One gathers from this that an infected herd can be freed and kept free of tuberculosis.

Herd Number 7.—The animals in Herd 7 belong to a dairyman whose carts displayed the notice "Milk from Our Own Cows", thereby implying the milk to be of superior quality.

Herd Number 8.—Full details of testing Herd 8 are as shown in Table II. During the year prior to testing, a cow was killed and found to be affected with generalized tuberculosis. Her milk had been fed to the yearlings while they were calves; this probably accounts for the high percentage of reactors in the yearling class.

Table II.

Group.	Number Tested.	Reactors.	Previously Killed or Died from Tuberculosis.	Percentage Affected with Tuberculosis (Reactors *plus* Deaths).
Milking cows ..	28	4	1	18
Two-year-olds ..	3	1	0	33
Yearlings ..	19	15	7	85
Calves	26	0	0	0

Herd Number 10.—The owner of Herd 10 had chosen one cow which he considered to be the best and healthiest. He kept her milk separate for house use. This house cow was a reactor. It frequently happens that farmers, rather than risk infection from the mixed milk of their herds, choose one of their best animals as a house cow. It is remarkable how frequently the house cow turns out to be a reactor, even when only a small percentage of the herd is affected. It is impossible, in the majority of cases, to ascertain, other than by testing with tuberculin, whether an animal is affected with tuberculosis or not. Animals having every outward appearance of good health at times are found on *post mortem* examination to be extensively affected with tuberculosis. When animals are not tested, milk, particularly for children, is safest taken from the mixed supply rather than from an individual cow.

Herd Number 11.—When this report was given to the owner he wished he had never consented to having the test done and flatly refused to allow further testing either of those animals left or of any animals bought to replace his reactors. He was a leading influential man in his district and highly thought of by his neighbours. At present there is no means of compulsion; no steps are taken to prevent his selling whatever cattle he chooses, although the farm is known to be infected.

Herds Numbers 11 and 12.—The majority of reactors in Herds 11 and 12 had been purchased from the same farm in another district. This majority was so marked that both farmers voluntarily revealed the seller's name. His animals are probably not yet tested; probably he is still selling them.

Still another method of spread was disclosed during the following test. An entire dairy herd, cows and calves, was tested. All the cows, sixty in number, were found to be free from infection. Of the seventeen calves tested, seven reacted. The source of infection was investigated and found to arise as follows. The fresh milk from this farm was sent to a butter factory; it was mixed with milk from other farms and separated. The separated milk was returned to the farmers to be used by them for raising calves, pigs *et cetera*. The calves had been infected through the mixed separated milk, some of which must have come from a tuberculous farm. It can readily be seen how infection can be carried from one farm through a factory to many farms. This shows the need for control over factory milk and management.

One would expect that the highest percentage of animals affected with tuberculosis would be present in the areas of small holdings with a large number of animals, where hand feeding was practised. Thus the nearer the farm is situated to Melbourne, the higher will the average percentage of tuberculous animals be; that this is so is demonstrated by the figures shown later (Table III). In contrast to this, Table I shows that while the high percentage are on farms of small holdings close to Melbourne (Herds numbers 1, 2, 3, 4, 5 and 7), four herds (numbers 6, 8, 9 and 10), which are on large holdings well away from Melbourne, are included in the twelve highest percentages of reactors of all my personal figures drawn from over 12,000 cattle. This suggests that fresh air, sunlight and open space are not absolute safeguards against the spread of the disease.

Table III.

The Relationship between the Percentage of Reactors and the Distance from Melbourne.

Miles from Melbourne.	Cattle Tested.	Reactors.	Percentage.
Up to 20	2,296	211	9·23
Up to 40	7,087	420	5·9
Up to 10	657	69	10·5
11 to 20	1,639	142	8·66
21 to 40	4,791	209	4·4
41 on	4,637	126	2·72
Total	11,715	546	4·7

Arising from the unexpected finding of badly infected herds well away from Melbourne, Table III was drawn up. This table strikingly supports the statement that the closer to Melbourne, the higher the average percentage of reactors.

The Incidence of Bovine Tuberculosis in Victorian Cattle.

The whole of the tuberculin testing of Victorian cattle from 1921 to 1933 (there being no official

Table IV.

Official Figures representing Tuberculin Testing of Victorian Cattle, 1921–1933.

Year.	Cattle Tested.	Reactors.	Percentage.
1921–22	29	3	10·5
1922–23	526	32	6·0
1923–24	211	14	6·6
1924–25	664	83	12·5
1925–26	689	69	10·7
1926–27	2,639	206	7·8
1927–28	2,449	180	7·2
1928–29	2,534	104	4·1
1929–30	2,465	123	5·0
1930–31	3,111	230	7·4
1931–32	3,105	155	4·9
1932–33	2,839	150	5·3
Total	21,261	1,349	6·3
1924–29	8,975	642	7·15
1929–33	11,520	658	5·7

figures prior to or other than these) is represented by the above figures (Table IV) which were obtained by courtesy of the Agricultural Department of Victoria. In addition is included a table of personal figures (Table V), the result of tests carried out by my father, two Danish veterinarians and myself during the period 1923-1935. The cattle tested, the results of which are shown in both the above-mentioned tables, are almost entirely milking cattle.

Table V.

Personal Figures of Tuberculin Testing carried out 1923–1935.

Year.	Cattle Tested.	Reactors.	Percentage.
1923–24	1	—	
1924–25	36	—	
1925–26	60	—	
1926–27	53	—	
1927–28	46	1	2·17
1928–29	135	7	5·11
1929–30	191	36	17·77
1930–31	143	11	7·7
1931–32	1,283	41	3·2
1932–33	973	58	5·95
1933–34	889	44	4·9
1934–35	8,287	398	4·8
Total	12,097	596	4·8
1923–31	1,948	96	4·9
1931–35	10,149	500	4·96

The personal figures show some variation from year to year in the percentage of reactors without a definite tendency towards either a fall or rise over the whole period.

It will be noticed that in the Departmental figures the percentage of reactors is somewhat higher in the earlier than in the more recent years; that is, there seems to be a tendency towards a lowering of the incidence as the eradication work proceeds. This, I think, is not a true reading of the facts. The figures before 1925-1926 can be largely discounted on account of the small number of animals tested. Since that time there is very little alteration. The *Cattle Compensation Act* and Fund were brought into force in 1924. The testing since then has been carried out under similar conditions. It is possible, therefore, to divide the period 1924-1933 into two for comparison.

1924-1929: 8,975 cattle tested, 642 reactors, 7·15%.

1929-1933: 11,520 cattle tested, 658 reactors, 5·70%.

This statement shows a fall in percentage of 1·45.

When one remembers that in the early years cattle were tested mainly to eradicate infected animals from herds known to be affected, consequently having a high percentage of reactors, while at present testing is carried out largely for the production of milk from tuberculin tested cows, then one realizes that there may not have been, as suggested by the above figures, a lessening of the disease.

A reduction in the percentage of reactors can hardly be expected if the following figures are examined.

The total milking cattle in Victoria at present number just under 1,000,000. The total cattle in Victoria at present number just over 2,000,000. Suppose that in 1924 there were 500,000 cattle (milking animals only) and that 10% (50,000) of them were affected (12·5% according to departmental figures for that year). Since 1924 only 1,300 reactors have been detected and removed (departmental figures), so that the greatest possible reduction in percentage would be from

$$\frac{50{,}000}{500{,}000} \text{ to } \frac{50{,}000 - 1{,}300}{500{,}000}$$

which is from 10% to 9·7%. This does not allow for reinfection and spread of the disease.

It should be remembered that the number of cattle in Victoria is increasing yearly; it would be possible to have a fall in percentage of affected animals although there is an actual increase in the number affected.

During the twelve-year period 1921-1933 only 21,261 animals have been tested; continuing at this rate it would take 444 years to test the dairy cattle, or 900 years to test all the cattle in Victoria at the present time. It must be obvious that when such a small amount of work is being done, to make any headway the work must be utilized in the best possible manner. A definite system or plan must be introduced and adhered to; herds once free from the disease must be kept free. No serious attempt has yet been made in this direction; consequently money paid for compensation has little chance of effecting the purpose for which it was raised, namely, eradication of tuberculosis.

A healthy herd may be infected with tuberculosis by any of the following means: (i) The introduction of infected animals. (ii) The introduction of infected produce, such as milk from butter factories. (iii) By allowing the herd to graze on public pastures, roads, commons. (iv) By showing or exhibiting members of the herd, thereby allowing

them to mix with infected stock or to be housed in infected stalls. (v) Infection may take place during transit, particularly if a vehicle used for this purpose becomes infected.

These are the main methods by means of which the infection is carried to a healthy herd. How can this disease be controlled when at present no attempt is being made to prevent infection spreading by any one of them? I do not think that any headway has been or is being made against this disease, which is present, in my opinion, to the extent of about five animals per hundred of dairy cattle, and three animals per hundred of beef cattle.

The Remedy.

The disease could be controlled, provided that it were attacked in a reasonable manner.

I am putting forward the following scheme as a practical method by which eradication of tuberculosis from cattle could be effected.

The objects of the scheme are:

1. Ultimately to free cattle from tuberculosis.
2. To obtain a tubercle-free metropolitan milk supply as rapidly as possible.
3. To obtain tubercle-free dairy products for overseas markets. ("Tubercle-free", as used above, is meant to signify free from *Bacillus tuberculosis*.)

The scheme is as follows: All the cattle within a certain distance from Melbourne, the enclosed area to contain 20,000 cattle, are to be tuberculin tested within twelve months, the reactors removed, and the non-reactors protected against infection by quarantine and other suitable measures. Two veterinarians, supported by a suitable organization to arrange testing in a systematic manner, could test this number in one year. Should this meet with the success which I think it would, then the area could be gradually increased in size, slowly at first, until the results are manifest. Later, more veterinarians could be employed, if thought fit, and the work increased according to the funds available and the support given. The initial cost should not be very great. Supposing the 20,000 animals to be in the ten-mile area which I have previously shown (Table III) to have a percentage of reactors of, roughly, 10, then the cost of compensation for the 2,000 reactors, taking £7 as their average value, would be £14,000. Services of veterinarians, *plus* tuberculin and equipment, would cost £2,000, making a total of £16,000.

Since the percentage of reactors diminishes the farther one gets from Melbourne (see Table III), it follows that the cost of compensation for reactors from a similar number of animals will diminish as the scheme extends. Thus while there are 10% of reactors in the ten-mile radius (that is, 2,000 animals in the 20,000), according to the figures I have previously shown, for the area over forty miles from Melbourne there are only 2·72% of reactors (that is, 500 animals in 20,000). It must be remembered, however, that these figures are based on the tests of only 11,000 cattle, and may not be reliable for the whole of the cattle in Victoria.

There are several points in favour of this scheme to which I would direct your attention:

1. It would be of low initial cost and therefore could be discarded, if necessary, without a considerable loss.
2. It would attack the disease first where the incidence is greatest.
3. It would attack the disease first where pure milk is most needed.
4. Under present conditions tuberculous milk can be dishonestly represented, advertised and sold as milk guaranteed from tuberculin-tested cattle. It is difficult to detect at present if this is being done; there have been no convictions. This scheme would make it difficult for ordinary milk to be represented and sold as milk from tuberculin-tested cattle.
5. By competition it would compel testing of cattle outside the area supplying milk inside that area and render expansion of the area less difficult.
6. It could make use of the present method of testing and also of testing that had been done. Herds that are already clean would be automatically picked up as the area expanded to them.
7. It would commence to give results by the end of the first year. Suppose of the 20,000 animals tested 15,000 milking cows were found to be free from tuberculosis by test; then, since the average yield per day per cow is about seven quarts, 105,000 children could be receiving one quart of "T.T.C." milk each a day. The metropolitan milk supply is at present 70,000 gallons per day, which is obtained from about 35,000 cows. By the end of the first year approximately half this number of animals would have been tested.
8. It is of great national importance to Australia if we can produce products free from living tubercle bacilli in competition with countries at present supplying Great Britain, which are known to have an incidence of tuberculosis of from 50% to 80% and consequently could not produce a similar article for years to come.
9. Dairy cattle are now at a low price; consequently at present the cost of compensation for reactors and animals for replacement would be at a minimum.

I would recommend that a committee be formed to consider the problem of eradication of bovine tuberculosis from this State.

Reviews.

PERIODICITY IN WOMAN AND CONTRACEPTION.

Professor Knaus has given us a readable book of exceptional merit in "Periodic Fertility and Sterility in Woman".[1] It deals with a difficult subject in a sound scientific fashion. Practically the first half of the book deals with the scientific investigation of facts concerning the biological basis of periodic fertility in animals and the

[1] "Periodic Fertility and Sterility in Woman: A Natural Method of Birth Control", by H. Knaus, with a foreword by F. H. A. Marshall, F.R.S.; authorized English translation by D. H. Kitchin and K. Kitchin, M.Sc., M.B., B.S.; 1934. Vienna: Wilhelm Maudrich. Super royal 8vo., pp. 162, with illustrations. Price: RM. 15 net.

human. This embodies a concise review of our present knowledge of the functions of the spermatozoon and ovum and of the parts played by the ovarian (follicular) and *corpus luteum* hormones. Time spent in the study of this section of the book will prove valuable to any gynæcologist desiring a thorough understanding of what is commonly regarded as an obscure field.

With the foregoing as a basis Professor Knaus describes in detail an original and impressive method of experimental biology in the human female. Any criticism of his methods used in obtaining data regarding ovulation in the human can be disregarded as the results obtained furnish us with knowledge previously quite unknown.

In the latter half of the book the author applies his fresh knowledge to defining a period of conception control depending on the date of ovulation, the life of the ovum and of the spermatozoon. In this way he evolves a natural method of birth control by temporary abstinence during the fertile period of the women. He puts forward a convincing case; and whether one reads the book from the point of view of gaining knowledge as to contraception or the investigation of sterility, the result cannot be anything but beneficial.

Well printed on good paper with copious illustrations and tables, the English translation by D. H. Kitchin and K. Kitchin provides something which must be regarded as of the highest order.

LABORATORY TECHNIQUE.

A VALUABLE summary of present-day laboratory technique is presented in "Clinical Laboratory Methods", by Pauline S. Dimmitt, Ph.G.[1] It possesses the great advantage of being written by a laboratory worker who has obviously carried out repeatedly all the tests that are described. There is no deliberate weighing of pros and cons as to which method is the best. The test is described briefly but clearly, and the one usually selected is the one that is generally adopted. If a pathologist wished for a manual of laboratory technique to hand to his technical assistant, this book would be the answer to his wish. It is a welcome addition to the laboratory bench library. As an indication of the modernity of the technique, the following tests are included: blood sedimentation rate (Cutler vein method), Friedman's modification of the Aschheim-Zondek test, undulant fever agglutination test. The illustrations are to the point and are helpful, and the references are recent and complete.

BENIGN BRAIN TUMOURS.

NEUROLOGISTS have for many years realized the limitations of clinical examination in the localization of the less common intracranial tumour. Sometimes it is impossible to separate the signs due to a tumour itself from those due to the associated cerebral œdema; sometimes there are only the signs of increase of intracranial pressure. Dandy, who was the pioneer of ventriculography, has recently published a monograph on tumours of the lateral cerebral ventricles, which presents the case for ventriculography in an unanswerable manner.[2]

He has collected the details of forty cases of this rare type of tumour, of which fifteen are from his own series. Of those collected from the literature, twenty-three out of twenty-five were found only after death; of his own series, all but one were accurately localized by ventriculography, all but one were totally removed, and twelve patients are alive and well. And to appreciate this fully, it must be realized that these are benign tumours, with an excellent prognosis if they can be removed.

Admittedly, these diagnostic and operative results have been achieved at the hands of a master. But what one neurosurgeon can do, others must strive to emulate, and physicians must begin to realize that no intracranial tumour should be classed as unlocalizable until a properly performed and interpreted ventriculogram has been tried and has failed to advance the diagnosis.

One chapter is given up to a description on small, non-symptom-producing tumours of the chorioid plexuses, which have been found chiefly in children, often associated with, but independent of, congenital hydrocephalus.

Then follows a detailed record of the author's own fifteen cases, with explanatory diagrams and excellent microphotographs, together with descriptions of the operations performed in each case.

Dandy is a strong advocate of adequate exposure, and does not hesitate to sacrifice large amounts of the so-called silent areas of the brain to achieve this. Some of his procedures are rather heroic, but any such criticism must be answered by his results and by the size of the tumours he has removed in entirety from the lateral ventricles and the foramina of Munro. Naturally enough as he can achieve such results, he condemns the palliative decompressive operation.

Apart from its value as a contribution to the literature on a special neurological problem, this monograph compels the reader to reflect again with admiration upon how much the art of neurosurgery owes to Cushing for the many improvements he introduced to operative surgery, making possible the extraordinary results described in this monograph.

RADIOLOGICAL TERMINOLOGY.

A USEFUL little book, "Radiological Terminology", by G. E. Gaitskell, consists of 90 pages and is a collection of the various terms used in radiological practice.[1] It contains much useful information and should be of special value to the general practitioner who is unfamiliar with these terms.

Several inaccuracies in spelling occur, for example, atalectasis for atelectasis, Perth's for Perthes's disease; also the author refers to Dunham's fans as occurring in pneumonokoniosis, whereas they occur in tuberculosis.

One particularly useful feature is the tabulation of the accessory ossicles of the carpus and tarsus. This can be recommended as a very handy book of reference.

Notes on Books, Current Journals and New Appliances.

COLLECTED PAPERS OF THE BAKER INSTITUTE.

THE second volume of the collected papers of the Baker Institute has been issued. The volume consists in bound reprints of forty-two articles that have appeared in different journals; it is a monument to the industry of the institute and those attached to it. Twenty-eight of the papers have appeared in this journal and seven are from *The Australian and New Zealand Journal of Surgery*, or, as it was once called, *The Journal of the College of Surgeons of Australasia*. Seven of the papers only were sent abroad for publication. The journals in which these papers appeared were: *The Journal of Physiology*, *The Biochemical Journal*, *The British Journal of Surgery*, *The Journal of Pathology and Bacteriology*, *The American Journal of Pathology*, and *The Journal of Anatomy*. Some day doubtless all Australian work will be published in Australia. We congratulate the Director on this publication and look forward to the third volume, which, he states, is to appear shortly.

[1] "Manual of Clinical Laboratory Methods", by P. S. Dimmitt, Ph.G.; 1934. Philadelphia: F. A. Davis Company. Demy 8vo., pp. 165, with illustrations. Price: $2.00 net.

[2] "Benign Encapsulated Tumours in the Lateral Ventricles of the Brain: Diagnosis and Treatment", by W. E. Dandy, M.D.; 1934. London: Baillière, Tindall and Cox. Royal 8vo., pp. 197, with 83 illustrations. Price: 20s. net.

[1] "Radiological Terminology", by C. E. Gaitskell, M.R.C.S., L.R.C.P.; 1935. London: J. and A. Churchill. Foolscap 8vo., pp. 90. Price: 5s. net.

The Medical Journal of Australia

SATURDAY, APRIL 27, 1935.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

THE MENTAL HOSPITALS OF NEW SOUTH WALES.

EVERYONE will agree that in the care of the sick most heed should be paid to those who can do little for themselves. Most people would say that to make such a statement nowadays is unnecessary. They would be wrong. They might point to the almost palatial modern hospitals for adults and for children and for those suffering from such diseases as tuberculosis and infectious diseases. They would probably also point with pride to the invalid pension scheme of the Commonwealth. If they thought of the mentally afflicted they might still hold their views. They know that each State in Australia has its mental hospital service and that there are huge buildings for the housing of mental patients. They see the well-kept park lands and gardens surrounding these buildings. They never see beyond the doors of these places and, though it is very mysterious, all seems well from the outside. If they were to read the latest annual report of Dr. C. A. Hogg, Inspector-General of Mental Hospitals of New South Wales, they would want to set inquiries on foot, to institute royal commissions, to have questions asked in Parliament, and what not.

Dr. Hogg's report this year is in many ways similar to his previous reports. He has repeatedly drawn attention to the totally inadequate provision made for his department and to the impossibility of giving his patients the treatment that they should have. Most of his difficulties arise from want of proper accommodation. For example, he points out that in some hospitals patients are still accommodated in weatherboard structures. At Parramatta alone some seven hundred patients are thus provided for. The risks from fire in such buildings are considerable. "Mental patients", he states, "are compelled to remain in these buildings by law, and it seems only reasonable that their lives should not be endangered by accommodating them in buildings that are not reasonably safe from fire." Again, at Gladesville the female patients in three wards and the male patients in three wards have to spend their lives looking at blank walls and the sky above. There is no day room for these patients, and when their meals are being prepared they have to be put out on to the verandas, where on wet days they are exposed to the weather. We agree with Dr. Hogg that these wards are a blot on the department, and there is no doubt that these conditions must lead to the deterioration of the patients "in every faculty". More unsavoury is the condition of things as far as tuberculous infection in the department is concerned. The number of tuberculous patients is such that special wards are needed to stop the spread of infection from one patient to another and to give infected patients the advantage of special care and nursing. The present state of affairs is a menace to the nursing staff. "Out of 23 nurses so far ascertained by the Director of the Tuberculosis Division who have been infected in hospitals throughout the State generally, no less than 8 have come from mental hospitals." Seventeen patients died from pulmonary tuberculosis during the period under review. In this regard Dr. Hogg makes the helpless and rather pathetic statement that mental hospitals are medical institutions. Further comment is superfluous. The recurring plaint of overcrowding is again raised. The total number of

patients resident in the mental hospitals at June 30, 1934, was 9,981; permanent accommodation is provided for only 9,324. A total of 657 has to be accommodated by temporary means and by overcrowding existing wards. This overcrowding is described by Dr. Hogg as detrimental to the treatment the institutions should afford.

While we would commend Dr. Hogg for the moderate tone of his report, the facts set out here (there are others in the report) are a crushing indictment of government inefficiency and neglect. It is not as though this were the first occasion on which they have been published in departmental reports. The ministerial pigeon-hole has been used as a safe repository long enough; surely it is time that the pigeon-hole was closed to matters of real importance. Mental patients are vastly different from persons afflicted with any other form of disease. With the exception of a mere handful of voluntary patients, they cannot leave the hospitals when they will. They must stay whether they like it or not. We wonder whether they ever complain. Did they do so, there would for the bureaucrat be the convenient reply that they were insane and therefore not responsible. We may thus conclude that of all human beings afflicted with disease, mental patients are the most helpless.

There is another side of the question that calls for reference, and that is the financial side. When a mentally afflicted person becomes an inmate of a mental hospital, his or her affairs are administered by the Master in Lunacy. During the twelve months under review by Dr. Hogg the sum of £91,995 0s. 8d. was collected by this official. No other sufferers from disease are treated in this way. (Admittedly the Master in Lunacy often protects the interests of the patient.) Since the State insists that patients with mental disease shall be detained, it should at least see that they are placed in surroundings most likely to be conducive to their recovery. During recent months a great deal of money has been spent on hospitals. Elaborate venereal clinics have been established where anyone, regardless of his financial status, may be treated free of charge. The only possible conclusion is that the Government spends money where the results may be seen by electors who have votes to cast. Since he issued his report, Dr. Hogg, having reached the age for retirement, has left the department. He leaves behind him a record of devoted service, though he bequeaths to his successor a legacy of blasted hopes. It is time that the veil was drawn aside and that the public realized that mental patients in New South Wales are in large measure being cruelly and shamefully neglected.

Current Comment.

ALCOHOLIC NEURITIS.

The term alcoholic neuritis suggests that alcohol is the cause of the pathological condition of the nerves. This view is held by many and the treatment in these circumstances consists in removing the cause, that is, cutting off the supply of alcohol. Lettsom first described alcoholic neuritis in 1789, and Jackson in 1822 gave a good description of the condition. Graves, however, is stated to have been the first to suspect that certain forms of generalized paralysis depend on a lesion not of the brain or spinal cord, but of the nerves themselves. Duménil, of Rouen, in 1864 first proved the presence of neuritis by the examination of *post mortem* specimens. These observations did not receive the recognition that they deserved, and it was not till some years later that the doctrine of peripheral neuritis was accepted. Peripheral neuritis of the so-called alcoholic variety is, of course, only one of those that are commonly described. An interesting account of the history of alcoholic polyneuritis will be found in that mine of information, Allbutt and Rolleston's "System of Medicine". In 1900 an outbreak of neuritis due to arsenic in beer raised doubts as to whether alcohol had a direct action on the peripheral nerves. Reynolds at this time had been expressing doubt as to whether alcohol *per se* caused peripheral neuritis at all. Later he stated that he did not deny the existence of alcoholic neuritis, but he thought that it was rare and usually of slight degree. J. S. Bury, who writes the article in Allbutt's "System", concludes his historical survey by stating that it is impossible to resist the conviction that alcohol is a common cause of neuritis. He qualifies this by adding that this does not necessarily imply that the condition is a direct result of alcohol. He thought that the action of alcohol might be an indirect one. It was, he stated, a reasonable assumption that the lowering of tissue resistance by alcohol permitted the successful attack of toxins, derived from microorganisms or from the changes associated with chronic inflammation, upon the nerves, liver, heart or other structure.

This short outline has been given to show that the opening sentence of an article by M. B. Strauss must

not be taken literally.[1] He states that since Lettsom first described alcoholic polyneuritis in 1787 (Bury gives the date as 1789), a direct neurotoxic effect of alcohol has been considered to be the causative agent. Strauss refers to Shattuck's suggestion, made in 1928, that alcoholic polyneuritis was caused chiefly by failure to take or to assimilate food containing a sufficient quantity of vitamin *B*, and might be regarded as beri-beri. He points out that certain clinicians have concurred in this view without advancing any further evidence for it. Others have pointed to clinical and pathological similarities between the neuritis associated with alcohol and that of beri-beri. These observations, in Strauss's opinion, undoubtedly add to the concept that so-called alcoholic polyneuritis is the result of dietary deficiency, but he thinks that they fail to prove the case against a direct neurotoxic effect of alcohol upon peripheral nerves.

Strauss holds that if alcohol has a direct neurotoxic effect on peripheral neuritis in the amounts consumed by persons who become affected by polyneuritis, this condition should become progressively worse if the use of alcohol in similar amounts is continued; he is certain that no amelioration of the polyneuritis could be expected to occur in patients who continued the excessive use of alcohol. He selected for study ten patients suffering from alcoholic polyneuritis not complicated by severe febrile infections or decubitus. The daily intake of spirituous liquors was determined in each instance and this amount of blended whisky was administered each day to each patient during the period of study. At the same time each patient was placed on a carefully selected full diet. At the same time eighteen grammes of "Vegex", or thirty Harris yeast-vitamin tablets, or ninety grammes of dried brewer's yeast were administered daily by mouth; ten cubic centimetres of a solution of liver extract were injected intramuscularly each week, and ten cubic centimetres of a vitamin *B* concentrate were injected intramuscularly every day. At first some difficulty was experienced in making the patients eat the requisite amount of food; but the end was gained by a threat to withhold the post-prandial whisky if the food was not all eaten. The period of treatment varied from 14 to 129 days, the average being 64 days. Observations made before and after treatment are set out in a table, and Strauss points out that in every instance the polyneuritis became less pronounced. Clinical observation of these patients revealed no differences in the rapidity or degree of recovery when they were compared with similar patients treated without the administration of alcohol.

Strauss concludes that so-called alcoholic polyneuritis does not result primarily from a direct neurotoxic effect of alcohol, but is probably the result of a dietary deficiency, possibly conditioned in some cases by disturbed gastro-intestinal function. To state this conclusion alone does not do justice to Strauss's argument. The patients investigated by him were taking up to a quart of whisky per day, and he states that it remains theoretically possible that even smaller quantities of alcohol might cause damage to the peripheral nerves. It is possible to argue that alcohol is poisonous to nerve cells unless there is a sufficient amount of vitamin *B* or some other dietary factor present to act as an antidote. Strauss points out that this speculation must remain unanswered for the present. Were it possible or, rather, justifiable, more reliable information might be obtained by taking normal persons in two groups, feeding those in one group on large quantities of alcohol and a diet adequate in every way, and feeding those in the other group on alcohol and an inadequate diet. In such an experiment it would at least be possible to determine the purity of the alcohol consumed. Strauss admits that in his observations there was no check on the purity of the alcohol that preceded the manifestations of neuritis in his patients. Everyone will agree that the consumption of large quantities of even pure spirituous liquors will most probably interfere with digestion and cause an anorexia likely to result in the ingestion of insufficient or inadequate food. Thus, whether alcohol is the actual or the predisposing cause of peripheral neuritis, part of the treatment will be the interdiction of alcohol. It would be absurd to allow an alcoholic with peripheral neuritis to continue taking huge quantities of the drug and to rely for treatment on the supplying of an adequate diet.

[1] *The American Journal of the Medical Sciences*, March, 1935.

PASSAGE OF IODIZED OIL INTO THE VENOUS CIRCULATION DURING UTEROGRAPHY.

THOUGH similar cases have been recorded before, it is interesting to note that Geza Weitzner has reported a case in which iodized oil injected for purposes of uterography passed directly into the venous circulation.[1] Weitzner gives the history in detail and points out that the accident may have been due to: (i) excessive pressure exerted during the injection, (ii) pathological permeability of the uterine vessels, (iii) injury to the uterine wall. The first possibility was excluded by the patency of the patient's one Fallopian tube. The second was excluded by a repetition of the injection, unaccompanied by any venous involvement, a month after the accident. The third is regarded as having been responsible, especially as vaginal bleeding, lasting for four days, occurred immediately after the injection was given. The month that elapsed before the second injection was given was ample time to allow any injury to the mucosa to heal. The importance of this case is emphasized by Weitzner that though the iodized oil used in this test was not injurious, medicated abortion-producing oils have caused death. He states that in the recent literature are records of over twenty-five deaths resulting from the injection of an oil into the uterine cavity to produce an abortion.

[1] *The Journal of the American Medical Association*, February 16, 1935.

Abstracts from Current Medical Literature.

MORBID ANATOMY.

Malignant Tumours and the Hypophysis.

C. S. McEuen, H. Selye and D. L. Thomson (*The British Journal of Experimental Pathology*, August, 1934), working on rats, have confirmed the observations of previous workers that vacuolation and other histological changes occur in the anterior hypophysis of rats bearing a transplantable tumour. They have carried their investigations further, however, and find that similar changes can be produced in the hypophysis by intraperitoneal implantation of kidney tissue. They conclude that the changes produced by transplantable tumours are not necessarily related to the malignant growth as such, but are at least partly due to decomposition of tissue in the necrotic centres of the tumours.

Clinical Mutations in Lymphoblastomata.

U. J. Wile and F. Stiles, junior (*The Journal of the American Medical Association*, February 16, 1935) state that for many years the lymphoblastomata, comprising *mycosis fungoides*, Hodgkin's disease, lymphatic leuchæmia, lymphosarcomata and subvarieties of these, have been studied and interpreted as separate and distinct entities. They hold that a clearer understanding may be had by recognizing the features that these conditions have in common and their possible relationships. They report a case of long duration (1921 to 1934), in which there was a definite mutation from clinical *mycosis fungoides* to Hodgkin's disease. The existing clinical mutations between the various types of lymphoblastomata constitute strong evidence in favour of the view that lymphoblastomata are genetically related neoplasms involving the lymphoid tissues.

Silicosis.

F. W. Simson (*The Journal of Pathology and Bacteriology*, January, 1935) has by a reconstruction method studied the silicotic process in the lung. He obtained a complete picture of the lesion and of its anatomical relations by reconstructing a model on an enlarged scale with the aid of serial sections. He describes his technique in detail. He finds that in the slowly developing type of simple silicosis, as seen in the lungs of a Witwatersrand miner, the discrete nodule is a sharply defined lesion and involves a limited area of tissue in relation to the respiratory bronchioles and the proximal part of their continuation, the alveolar ducts. There is, the author states, no evidence of "beading" of the larger blood vessels and bronchi from proliferative changes in the related lymphoid tissue. The silicotic nodule is composed of a mass of pigmented, loose, diffuse, fibrous tissue and one or more whorled hyaline islets which are usually situated in the angle formed by two dividing respiratory bronchioles. These bronchioles pass through the peripheral cellular zone of fibrosis surrounding the islets, and at this point usually show definite but varying degrees of stenosis. The terminal air passages are accompanied by branches of the pulmonary artery, but not by branches of the corresponding vein. Parts of these terminal arteries are incorporated in the fibrosis of the silicotic nodules, but show as a rule no evidence of stenosis. The alveolar tissue in the immediate neighbourhood of the discrete silicotic nodule almost invariably shows well marked emphysema.

Hodgkin's Disease.

Edith L. Potter (*Archives of Pathology*, February, 1935) discusses the diagnosis of Hodgkin's disease. Pathological conditions of the lymph glands may be divided into two groups: (i) those secondary to disease elsewhere in the body, (ii) those in which lymphoid tissue is the structure primarily involved. The first group, which includes simple hyperplasia, acute and chronic inflammation, and metastatic tumour infiltration, ordinarily presents no difficulty in diagnosis. The second group, which includes the leuchæmias and reticuloendotheliosis, the various types of lymphosarcoma, reticulo-endothelial sarcoma, endothelioma and Hodgkin's disease, has always given difficulty in diagnosis. Histologically the only specific feature of Hodgkin's disease is the Hodgkin cell. Other features, described as characteristic of Hodgkin's disease, such as loss of structure of the gland, invasion of the capsule, hyperplasia of the reticulum cells, increase in the number of eosinophile and plasma cells, decrease in the number of lymphocytes, and fibrosis, are not specific for Hodgkin's disease, either singly or collectively, and occur in other diseases of lymph glands. Hodgkin cells are not present in every lymph gland in Hodgkin's disease, but in their absence a positive diagnosis cannot be made.

The Lymphatics in Œdema.

B. D. Pullinger and H. W. Florey (*The British Journal of Experimental Pathology*, February, 1935), in the course of an article on the structure and functions of the lymphatics, record experimental observations on the lymphatics of the ear of the mouse. They discuss the dilatation of lymphatics in œdema. Drinker and Field suggested the possibility, though no proof existed, that the delicate lymph capillaries were fixed to surrounding tissues by fine strands of reticulum and that muscular movements by pulling on these strands might induce distortion and temporary openings through which fluid entered, eventually to reach a valved trunk from which escape did not occur. The authors find that the lymphatics of the mouse's ear have a very extensive and intimate connexion with the surrounding fibres of the connective tissue. They regard it as probable that the connexion of the lymphatic walls with the surrounding tissue is a general relationship. Lymphatics become dilated in all inflamed tissue and the authors find it difficult to see a satisfactory explanation of their dilatation except along the lines indicated by their histological observations. It has been shown that slight injuries increase the permeability of the lymphatics to certain dyes. In inflammation and most forms of œdema there is injury to the tissues, so that there is a simultaneous dilatation of lymphatics with increase in their permeability—a state of affairs which must considerably facilitate the drainage of the tissues. Dilated lymphatics should not be interpreted as blocked vessels unless adequate proof is obtainable.

Bronchiogenic Cancer Combined with Tuberculosis of the Lungs.

B. M. Fried (*The American Journal of Cancer*, February, 1935) has studied thirteen cases in which both tuberculosis and cancer were present in the same lung. Two morbid conditions may meet accidentally in the same organ, or one may play a rôle in the causation of the other. In the author's cases both possibilities have occurred. The tuberculous lesions found in the lungs of the patients were of the healing fibrotic type, being to all appearances of long standing. In two cases there probably occurred a dissemination of the bacillary infection, causing a slight exacerbation, in which the advancing cancer may have played a biological and a mechanical rôle. In some cases the malignant condition developed independently from the tuberculous disease; in others it was engrafted on an "ancient fibrotic infection". The author emphasizes the statement that in any case of chronic pulmonary affection in a person of middle or past middle age, with persistence of symptoms, particularly if accompanied by progressive loss of weight and strength, the possibility of malignant disease should always be considered. The presence of pulmonary tuberculosis does not exclude the existence of a malignant process in the same lung.

The Brain of the Mental Defective.

W. R. Ashby and Ada Glynn (*The Journal of Neurology and Psychopathology*, January, 1935) have investigated the chemistry of the brain in the mental defective. They have analysed chemically the grey matter of the frontal lobe of 71 brains; 62 were obtained from mental defectives of varying mental ages, and 9 from normal adults. Their analysis covered the investigation of water, total

extract, residue, cholesterol, cerebrosides, phosphatides and protein-phosphates. The experimental error was estimated and was found to be below certain limits. They find that the water content shows a significant correlation with mental age, the normal brains being drier than those of defectives. The myelin content showed no change with mental age, nor did the constituent lipoids—cholesterol, cerebrosides and phosphatides. A significant correlation was found with mental age as far as the protein-phosphorus was concerned, the brains of the defectives being relatively richer in protein-phosphorus than those of the normal persons. The authors discuss reservations to which their conclusions are subject. They finally discuss two possibilities. The first is that in the brain of the defective the nerve cells are immature. If this is true, they think that their work suggests that the immaturity shows itself chiefly in the lack of cytoplasm rather than in any alterations in the amount of nuclear material. The second possibility is that in the brain of the defective there is an excess of neuroglia. No investigations have been made into the amount of neuroglia present in the brain of a defective. They cannot decide between the two possibilities, and they point out that the two may occur together.

MORPHOLOGY.

Inherited Brachydactylia.

K. I. NISSEN (*Annals of Eugenics*, October, 1933) presents the results of the investigation of the New Zealand branch of the Ashmore family. In the four generations concerned there are 62 individuals possessing one brachydactylous parent, and in 61 of these it has been possible to ascertain whether or not the condition is inherited. No case of intermarriage between affected individuals has occurred in the family, so that the possibility has not arisen of any member becoming homozygous for the deformity. The affected persons may therefore be regarded as heterozygous with respect to a dominant Mendelian factor for the condition. Marriage between members of a family, both of whom present even a minor hereditary deformity, may have a very serious (lethal) effect on the offspring, any or all of whom may be homozygotes. In the present cases under investigation two cousins married, one of whom was definitely and the other possibly brachyphalangous. Of the two children, one was a cripple, "the whole osseous system being in disorder", and died at the age of one year. This was the only example of such an affliction in the whole family. In the series both males and females were affected, and as both may transmit the condition to their offspring, it is quite clear that the character shows no sex linkage. The increase in the number of the living affected members of the family from 1 to 26 in about 70 years is remarkable and indicates that the presence of the deformity in no way diminishes fertility. The radiological findings are reviewed and it is obvious that the normal development of the phalanges has in some way been disturbed. Details are given.

The Intrinsic Nervous Mechanism of the Human Lung.

JOHN B. GAYLOR (*Brain*, June, 1934) demonstrates histologically the intrinsic nervous mechanism of the lungs. The bronchial plexus is essentially a single plexus, ganglionated at certain of its nodes. Sensory endings are described in the epithelium of the bronchus, in the plain muscle layer and in the pulmonary vessels. The motor innervation of the bronchial musculature as described by Larsell is confirmed. The parent plexus of the vascular innervation of the pulmonary vessels is demonstrated and described. Certain conjectures are made with regard to the physiological significance of: (*a*) Endings in the plain muscle layer and the Hering-Breuer reflex; a contribution is made to the explanation of the symptomatology of asthma. (*b*) The significance of the epithelial endings is discussed, and the effects of stripping of the epithelium are mentioned. (*c*) The possibility of axone reflexes is discussed.

The Syndrome of the Premotor Cortex in Man.

M. A. KENNARD *et alii* (*Brain*, March, 1934) describe a case of forced grasping which, like other cases described in clinical literature, exhibits spasticity, increase of the tendon reflexes of the digits, and gradual impairment of skilled movements of the fingers. These symptoms, together with vasomotor disturbances of the affected extremity, form a well-defined clinical entity which they designate "the syndrome of the premotor cortex". All manifestations of the condition can be reproduced experimentally in the subhuman primates by lesions restricted to the premotor area. The changes in skin temperature and sweating on the side opposite the lesion indicates that representation of the autonomic nervous system exists in the cortex.

Motor Effects of Sensory Nerves Experimentally Connected with Muscles.

PAUL WEISS (*Anatomical Record*, November, 1934) attempts to answer the question of whether a sensory nerve could form functional motor connexions with a muscle. A review of the literature is given, including the work of Philipeaux and Vulpian (1863), who connected the proximal lingual with the peripheral hypoglossal in dogs and found that after a few months of recovery contractions of the tongue muscles could be obtained by stimulating the trunk of the lingual. They subsequently discovered that the lingual was not purely sensory, but included some components with motor or "pseudomotor" effects on the tongue contributed to the lingual by the *chorda tympani*. Thereafter the original experiments on heterogenous nerve connexions were no longer regarded as conclusive. The present author devised new experiments in which mixed nerves were turned into purely sensory nerves by destroying the motor roots (and in a number of cases the sympathetic ganglia and connexions also). These nerves were then severed peripherally and the cut surface was inserted into a denervated muscle. The inserted sensory nerve fibres formed motor connexions with the muscle. From ten weeks on after the operation these connexions were found to be functional: electrical stimulation (single induction shocks) applied to the nerve yielded normal motor contraction in the muscle. The author therefore claims to have definitely proved that sensory nerve fibres can transmit motor effects to muscles.

Studies in Pelvic Architecture.

W. E. CALDWELL, H. C. MOLOY AND D. A. D'ESOPO (*American Journal of Obstetrics and Gynecology*, October, 1934) suggest a new classification of female pelves and describe the anatomical characteristics of the four parent types, namely, the gynecoid, android, anthropoid and flat (platypelloid) forms. They give an analysis of the pelvic form in 215 primigravid women so as to evaluate the practical usefulness of the classification, to define the intermingling of types, to cite the frequency of occurrence of the various forms classified, and to clarify certain points of anatomical and obstetrical interest. They suggest that two influences are at work: one, the arrest in evolution from the ape form, the true anthropoid, to the perfect human form, which is characteristically flat, and the other, a sexual or hormonal factor which may determine certain masculine characteristics in the female form. The paper is illustrated with numerous figures, charts *et cetera*.

Sympathetic Nerves of the Monkey.

S. ZUCKERMAN AND H. S. BURR (*Anatomical Record*, December, 1934) dissected the rhesus monkey and demonstrated that the vascular branches of the lumbar sympathetic chain may reach the walls of the peripheral vessels directly without joining or running into the somatic nerves. Other cases were seen in which the somatic nerves may receive sympathetic contributions directly as well as by way of the *rami communicantes* of the spinal roots from which they take origin. These findings are another demonstration of a well known fact that a growing axis cylinder may follow any one of a number of different paths to reach its ultimate destination.

British Medical Association News.

ANNUAL MEETING.

THE ANNUAL MEETING OF THE TASMANIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Tasmanian Museum, Hobart, on March 16, 1935, DR. W. L. CROWTHER, the President, in the chair.

Annual Report.

The annual report was read and adopted. The report is as follows:

The Branch Council has much pleasure in presenting the annual report for the year ending December 31, 1934, as follows:

The membership of the Branch, which was 84 at the beginning of the year, was 73 at the beginning of 1935. Four new members have been elected, four have been transferred into the Branch, seven have resumed membership by payment of the overdue subscription within the period of grace, while one member has resigned, two have left the state, two have died, and 21 members lapsed on January 1 through non-payment of their subscriptions for 1934, but some of these have since paid their subscription.

Since the last annual meeting there have been held nine ordinary and one special general meeting, the average attendance being 15·3, compared with 17·2 in the previous year.

Papers have been read by Dr. Short and Dr. Hamilton, and cases have been demonstrated or described by Dr. Whishaw, Dr. Stoddart Barr, Dr. Ireland, Dr. T. Giblin, Dr. Fay, Dr. T. Butler and Dr. Goddard.

Eleven meetings of the Branch Council have been held, the attendance being as follows:

Dr. Crowther	4	Dr. Shugg	6
Dr. Brettingham Moore	9	Dr. Gibson	8
Dr. Stoddart Barr	3	Dr. Reid	3
Dr. Goddard	8	Dr. Walch	11
Dr. Fay	8		

The Northern members of the Council, Dr. G. E. and Dr. G. M. W. Clemons, have not attended. Our President was for a time unable to attend owing to ill-health.

The successful session of the Australasian Medical Congress which was held in Hobart at the beginning of the year was mentioned in our last annual report.

In pursuance of a resolution passed at the last annual meeting, a committee was formed to wait on the Lord Mayor and ask that a public meeting be called to inaugurate the Southern Tasmanian Anti-Cancer Campaign. After its successful inauguration, our Branch has had no further official connexion with the campaign.

At the request of the Association of Headmasters and Headmistresses, an opinion as to the advisability of rowing races for schoolboys was drawn up by Dr. Fay and Dr. Shugg and approved by the Branch.

A committee was appointed to confer with representatives of the friendly societies with a view to the inclusion in the Model Lodge Agreement of a clause which allows lodge doctors to charge for services rendered to injured workers in receipt of benefits under the *Workers' Compensation Act*. This clause was accepted by the Southern Tasmanian Friendly Societies' Association.

The Branch considered the adoption of a schedule of fees for use under the *Workers' Compensation Act* in the treatment of injured workers. The Tasmanian Underwriters' Association was approached in the matter, but was not willing to adopt a schedule at present. The scale of fees in use in New South Wales was sent to members for their guidance.

The question whether the Branch should make a contribution to the funds of the Southern Tasmanian Anti-Cancer Campaign was discussed, but it was resolved that members should be asked to contribute individually.

The Branch considered and approved a maternal welfare scheme submitted by Mrs. Waterworth.

THE BRITISH MEDICAL ASSOCIATION (TASMANIAN BRANCH).

Statement of Receipts and Payments for the Year ended December 31, 1934.

RECEIPTS.	£	s.	d.
To Balance, January 1, 1934	308	9	11
„ Members' Fees	310	17	7
„ Interest on Fixed Deposit, E. S. & A. Bank	17	2	5
„ Interest on Fixed Deposit, Hobart Savings Bank	9	7	11
„ Interest on Debentures, Australasian Medical Publishing Company, Limited	4	0	0
	£649	17	10
January 1, 1935—			
To Balance	£293	17	9

PAYMENTS.	£	s.	d.
By Australasian Medical Publishing Company, Limited—			
For 1933 £125 0 0			
For 1934 2 0 0			
	127	0	0
„ Remittance to London (Capitation Fees)	103	4	9
„ Federal Council	13	4	2
„ Southern Division	20	0	0
„ Northern Division	17	10	0
„ Secretary's Honorarium	30	0	0
„ Auditors' Fees	2	2	0
„ Rent, Royal Society	10	0	0
„ Duplicating, Printing and Stationery	9	18	0
„ Dr. Walch—Fees and Petty Cash	10	7	3
„ Secretary's Petty Cash and Assistant's Salary	10	8	0
„ Bank Charges, Cheque Book *et cetera*	2	5	11
„ Balance	293	17	9
	£649	17	10

Audited and found correct.

(*Signed*) ADAMS & BENNETTO,
Chartered Accounts (Aust.),
Auditors.

Statement of Assets.

	£	s.	d.
Furniture at Library	20	0	0
Cash at E. S. & A. Bank	284	9	10
Fixed Deposit at E. S. & A. Bank	400	0	0
Deposit with Hobart Savings Bank, with Interest	150	7	11
Australasian Medical Publishing Company, Limited	95	0	0
	£958	17	9

A contribution of £1 11s. 2d. towards the cost of sending a stuffed koala as a gift to the head office of the Association in London was made from the funds of the Branch.

A meeting of the Tasmanian Branch of the Royal Australasian College of Surgeons was held in Hobart in October, to which members of the Branch were invited, and a considerable number availed themselves of the opportunity of attending.

Financial Statement.

Dr. J. S. Reid presented the balance sheet for the year ending December 31, 1934 and pointed out that the Branch was not in as good a condition financially as it had been twelve months previously. It was resolved that the matter be referred to the incoming Council to consider and present a report to a subsequent meeting of the Branch. The financial statement is published herewith.

Election of Office-Bearers.

The following office-bearers were elected for the ensuing twelve months:

President-Elect: Dr. E. Brettingham Moore.

Vice-President: Dr. J. Stoddart Barr.

Honorary Treasurer: Dr. Thomas Giblin.

Honorary Secretary: Dr. James Walch.

Members of Council: Dr. C. N. Atkins, Dr. F. W. Fay, Dr. W. L. Crowther.

Honorary Auditors: Messrs. Adams and Bennetto.

The President, in declaring the positions to be filled as above, cordially thanked Dr. J. S. Reid for his valued services as Treasurer and expressed the regret of members on his resignation of that office.

The Northern Division.

A report on the Northern Division of the Branch was read. It was suggested that if post-graduate lectures were to be fully attended by men from outlying parts of the island, a sufficient notice should be given them so that they might arrange to be present.

The Chairman apologized for the absence of the newly elected President, Dr. Clemons, and vacated the chair, which was taken by Dr. Stoddart Barr.

Retiring President's Address.

The retiring President then delivered his address, entitled "Some Aspects of Medical Practice in Van Diemen's Land, 1825-1839" (see page 511).

Annual Dinner.

The annual dinner of the Branch was held on the previous evening at Hadley's Hotel. The guests of the Branch were: His Excellency Sir Ernest Clark, Sir Holburt Waring and Sir D'Arcy Power. There was a large attendance, including the President-Elect, Dr. Clemons. During the evening Sir D'Arcy Power delivered a short address on "Some Papyri of Ancient Egypt".

Public Health.

PUBLIC HEALTH WORK AND METHODS IN VARIOUS COUNTRIES.

THE following is the text of a report by Dr. A. R. Southwood, head of the Department of Public Health, South Australia, of an inquiry into public health work and methods in various countries. The report bears the date January 24, 1935.

INTRODUCTION.

Health Work in South Australia.

Throughout the world there is a great deal of variation to be observed, not only in the scope and nature of public health work, but also in the administrative arrangements existing in various countries to deal with it.

The health administration of South Australia is under the charge of the Chief Secretary. The Central Board of Health consists of three medical men (one of whom is the Chairman and permanent head of the department) appointed by the Governor, and two representatives of the local boards of health. The Central Board acts as a supervisory body over all local boards, and supplements this by an active policy of inspection and advice, and also has concurrent jurisdiction with local boards.

Under the *Health Act* every municipal council is constituted a local board of health for its municipality, and every district council is a local board of health for its district. There are 167 local boards of health in the State. Under the *Food and Drugs Acts* every local board of Health is constituted the local authority for its district. Local boards of health are charged with securing the proper sanitary condition of their respective districts, the control of infectious diseases, the maintaining of a pure food supply, and the licensing of private hospitals and maternity homes.

In the metropolitan area all the powers of the local boards of health under the *Food and Drugs Acts* and the functions of the local boards of health under the *Health Acts*, so far as they concern food supplies, are vested in the Metropolitan County Board, which is composed of representatives from the constituent local boards of health.

The control of government and government-subsidized hospitals is vested in the Inspector-General of Hospitals Department, which is also under the Chief Secretary. The Metropolitan Infectious Diseases Hospital at Northfield (Adelaide) is controlled by municipal and district councils through a special board.

Lessons from Other Countries.

The problems that arise in public health administration in our State, although differing in some respects from those arising in more populous centres, are nevertheless of the same general character. The Central Board of Health has at its command but a small department, yet its work covers in a broad way the field covered by larger health departments elsewhere. In our small community there are neither personnel nor funds to indulge to any worth while degree in public health research work or in experimenting with new methods. We are wise if we watch carefully the developments in the larger centres and profit where we can by the results observed there. In other words, we may allow others to bear the expense and perhaps at times make the mistakes, and we can take advantage of their experience.

From these considerations I welcomed the opportunity of eight months' leave from my duties as Chairman of the Central Board of Health, for I was able to make a tour of some of the European and American countries and to gain a close insight into the character of the work of their public health departments.

The National Character of Health Work.

Most governments are now seized with the great importance of the people's health. Medical examinations of recruits during the Great War showed that in all countries a large proportion of people suffered from preventible illnesses, with resulting disabilities. It is realized now that disease is not merely a matter of concern to the individual; it is often a grave national danger. Only a healthy people can make a happy, prosperous and vigorous nation.

In all the countries visited I was impressed with the big national character of public health work. Although local authorities carry out the detailed work, the direction, supervision and encouragement of central departments are essential. I was impressed, too, with the continued widening of the public health field. England, the home of sound health work, appears still to lead the way, and although many of the administrative arrangements there are rather involved, the results achieved are remarkable. Perhaps the greatest achievement of England has been the sound basis on which national health assurance has been placed. It is over twenty years since the scheme was introduced, and it appears to be working satisfactorily in every respect. It is also a striking fact that, whereas in the past much public health work was remedial and environmental in character, more and more emphasis is now being placed on the preventive and personal aspects.

Scope of the Report.

The honorary commission granted me by His Excellency the Governor authorized me "to inquire into and report upon the administration of health departments, methods of public education in health matters, methods of controlling infectious diseases, and especially pulmonary tuberculosis, and methods of food control in Great Britain, the Continent of Europe and the United States of America".

Most of my time abroad was spent in studying the public health arrangements in England, and through the great kindness of officials of the Ministry of Health, the London County Council and other local authorities I was able to acquire a good knowledge of the work being done. Scotland, Germany, France, Canada and the United States of America were also visited. Health officials in these countries were interviewed and many institutions were inspected. The report which follows is but an outline of the work done. A vast number of publications from various sources was accumulated, and these will be a valuable reservoir of information to assist in guiding our activities in South Australia.

Conferences and Congresses.

During my stay in England I was fortunate in being able to attend two large public health congresses: that of the Royal Institute of Public Health at Norwich in May, and that of the Royal Sanitary Institute at Bristol in July. My reports of these congresses were transmitted to The Honourable the Chief Secretary at the conclusion of each congress. I have made mention in this present report of some of the matters reviewed. I also attended the annual conference of the National Association for the prevention of Tuberculosis in June, and of the British Social Hygiene Council in July, and the annual meeting of the British Association for the Advancement of Science at Aberdeen in September. In addition, I took every opportunity for inspecting hospitals, university schools of public health and research institutions in the various countries visited.

Personal Thanks.

The full list of all those who assisted me in my work abroad is a very large one. It was my good fortune to receive unfailing courtesy from all whose help I sought.[1]

Administrative Arrangements in Various Countries.

It will first be helpful to review briefly the official administrative arrangements existing in the countries visited and to discuss the points of similarity and difference.

[1] The list of names given in the report has been omitted owing to lack of space.—EDITOR.

England.

The public health policy of England and Wales is formulated by the Ministry of Health, and the responsibility for carrying out the actual work devolves on local authorities, of which there are over 1,800 in England and Wales. The Ministry supervises their activities, and from time to time Ministry officials make careful surveys of the public health departments of the various local authorities.

The Ministry of Health is also concerned with destitution, housing and sickness insurance. There are other government departments with medical activities: the Home Office deals with factory hygiene, with the police and medical work in prisons, and with administration of the *Dangerous Drugs Acts*; the Board of Education superintends the medical care of school children; the Board of Agriculture is concerned with diseases of animals communicable to man; the Ministry of Pensions deals with ex-service men. Between these many departments there appears to exist a most effective liaison.

The local authorities concerned in public health administration are: (*a*) County councils. There are 63 of these. They are responsible to the Ministry of Health for the public health work of their areas. In some directions they exercise supervision over urban and rural authorities within their areas, but they have no jurisdiction over county boroughs. (*b*) County borough councils. These have wide powers and are responsible directly to the Ministry, and not to any other county council. There are 83 county borough councils, constituted mainly by the large cities. (*c*) Metropolitan borough councils. Public health and general local administration in the London area are conducted by 27 boroughs and by the two cities, London and Westminster. (*d*) Municipal borough councils. Most of the smaller towns are municipal boroughs. There are 253 of them. (*e*) Urban district councils, numbering 782. (*f*) Rural district councils, numbering 638. The last four classes of councils are in some respects subject to supervision by county councils.

The London County Council is the largest county council in England and, indeed, the largest local administration in the world. It deals mainly with poor law administration, public health and education. Its constituent metropolitan borough councils carry on the scavenging and sanitary work, child welfare schemes, tuberculosis dispensaries and the investigation and control of infectious diseases. The London County Council provides for the institutional care of sufferers from tuberculosis and from insanity, and also conducts a large number of general hospitals, children's hospitals and convalescent homes. There are altogether 93 institutions, providing accommodation for over 70,000 patients and employing a staff of over 20,000 persons.

Buckinghamshire provides a convenient example of a county council covering a rural area. It has a population of 270,000. Its council administers the registration of nursing homes, notification of births, the care of mental cases, health visiting, supervision of dairies, foods and drugs control. Its council also conducts clinics for tuberculosis and venereal diseases and provides sanatoria and hospitals for infectious diseases.

Croydon is a county borough adjacent to London and has a population of 240,000. It is largely a dormitory town. The health work is very actively and efficiently conducted. The City of Hull is also a county borough with a population of 313,000. Health departments in centres such as these employ a large highly trained staff. In Hull, for instance, the staff comprises a medical officer of health and fourteen assistant medical officers. There are also the medical staffs of the infectious diseases hospitals, the tuberculosis dispensaries and sanatorium, and two general hospitals, these institutions being conducted by the city council. There are in addition a number of part-time medical officers employed by the city council as consultants and as medical officers to maternity and child welfare schemes and venereal diseases clinics. The medical staff—whole-time and part-time—totals fifty. There are also two veterinary surgeons, thirty-two male health inspectors, forty-seven health visitors and nurse-inspectors,

and forty-six clerks. The nursing staff and other attendants of the institutions named number altogether seven hundred.

Scotland.

In most respects the methods of central and local government in Scotland resemble those of England. The Department of Health for Scotland, with its headquarters in Edinburgh, corresponds to the Ministry of Health in London. The department is under the Secretary for Scotland, who is a member of the British Cabinet, and it administers the various public health enactments, just as the Ministry of Health does for England and Wales.

A special feature of the Department's work is the provision of medical services for the highlands and islands. These services are subsidized by the department to the amount of £76,000 *per annum*, and proper medical care is provided for the sparsely distributed and poor population in northern Scotland.

In Scotland there are local authorities of the following kinds: (*a*) County councils, numbering 31. (*b*) Town councils and large burghs. There are 23 of these, including the cities of Edinburgh, Glasgow and Aberdeen. (*c*) Town councils and small burghs, numbering 173. (*d*) District councils, dealing with rural areas.

The city of Edinburgh has a population of nearly half a million. As in the large cities of England, the one health department deals with all the public health work of the area and conducts infectious diseases hospitals, sanatoria, general hospitals and mental hospitals.

In Aberdeen there have been valuable advances towards unification of the public medical services of the City of Aberdeen and the adjacent Counties of Aberdeen and Kincardine. The total population is about 400,000, and the area altogether is about one and a half million acres. The one public health department, supervised by a committee elected by the constituent councils, conducts the health work, hospitals and laboratories of the area. The scheme is regarded by many authorities as a model one.

Germany.

Germany is a federation of states, and the medical arrangements of the various states differ. The German Government conducts a central health office (*Reichs-gesundheitsamt*) and a health council, an advisory body of 75 members, is appointed by the government. The work of the central health office corresponds in a general way to that of the British Ministry of Health; it endeavours to coordinate and stimulate the public health work of the various states.

The *Sickness Insurance Act*, on which the national insurance scheme in England was based, is a federal law and applies to all states.

Hospitals in Germany are chiefly under municipal government. The municipal hospitals in Berlin provide 12,000 beds. The teaching hospitals associated with the larger universities are under national control. There are also many voluntary hospitals, conducted by religious bodies and other private organizations.

France.

The general arrangement in France appears to be that of central control. The active local enterprise so noticeable in England is lacking in France. The large hospitals, however, are mainly municipal. A splendid new building for the Beaujon Hospital, Paris, was nearing completion at the time of my visit. The building is a nine-story one of modern architecture and is excellently equipped. It will provide 1,000 beds.

The tuberculosis work in Paris is conducted in a series of suburban clinics and a central chief dispensary is attached to the Laennec Hospital. The scheme seems an efficient one and is similar to those seen in English cities.

Canada.

The Department of Pensions and National Health of the Dominion of Canada deals with pensions for ex-service men and for civilians, as well as with public health matters. It also administers the food and drugs legislation for the whole Dominion. It deals with public health questions of international, national and interprovincial interest.

The health departments of the provinces correspond to the health departments of Australian states. Municipal and other local authorities have the responsibility of carrying out the bulk of the health work under the supervision of the provincial departments.

United States of America.

In the United States of America also there are federal, state and local health departments, with functions similar to those of the corresponding departments existing in Australia.

The United States Public Health Service is a subdepartment of the Treasury. It aims to coordinate and stimulate health work throughout the country. It conducts active research work into various medical problems, in this function resembling the Medical Research Council in England. Food and drugs legislation is administered by the Department of Agriculture.

The health departments of the individual states supervise the work of local authorities. Except in the cities and large towns, however, the local authorities do not appear to be very active, and the state department actually carries out the work. The State of Massachusetts, for instance, is divided for public health administration into seven districts, each district health centre having a directing medical officer, a sanitary inspector and a sanitary engineer. These district health centres are conducted as branch offices of the state health department. The department also conducts laboratories for bacteriological and chemical investigations, and much active research work is carried on.

New York and other thickly populated centres are ranked as first class cities, and in the conduct of their health work they are responsible only to the federal and not to the state health department. They therefore resemble cities of the county borough type in England. In recent years a number of health centres have been established in New York. There are now seven such centres working as branches of the city health department, and it is proposed to institute about twenty more. These branch offices are housed in special buildings and they serve as centres for welfare clinics of all types. The plan seems a good one and tends to prevent undue centralization.

The City of Boston Health Department is similar to that of New York. Some of the health centres in Boston have been privately endowed and are imposing and well equipped buildings. Each centre serves as the health office for the surrounding portion of the city. Tuberculosis clinics and maternity and child welfare clinics are conducted, and a day nursery is provided for children of the "toddler" stage.

The County of Los Angeles has a similar arrangement to that existing in Aberdeen (Scotland). Several adjacent local authorities have cooperated and have set up one public health department to conduct the health work of the combined area. The arrangement appears efficient and satisfactory to all parties.

New Zealand.

During a brief stay in Auckland I made inquiries into the health arrangements of the Dominion. The Department of Health of the Dominion supervises quarantine, food and drugs, medical inspection of school children, private hospitals, health of natives, and dangerous drugs. The Dominion is divided into nine regional districts, and there is a government health officer in each district to conduct the health work. The local authorities attend to scavenging and other sanitary services, and their health work is in the charge of sanitary inspectors. Most of the local authorities do not employ medical officers, but depend on the government health officer of their district for expert guidance. In some instances the sanitary inspectors are employed by the Dominion Government, but the local authorities may bear portion of the salary expenses.

In the City of Auckland there is no medical officer on the council staff. There is a sanitary inspection department of the city, and this department cooperates with the Government Health Officer of the Central Auckland District. Most of the public health arrangements of Auckland are virtually under the direction of the government medical officer. The arrangements for carrying out health work in New Zealand are therefore in striking contrast to those of England, where local authorities themselves perform the work of their areas and rely on the Ministry of Health only for general advice and guidance. Although in England the government makes financial grants to local authorities to enable them to carry out satisfactory health programmes, the actual spending of the money and conduct of the work is a function and responsibility of the local authorities. I formed the opinion that English local authorities would raise vigorous objections if any alteration to that arrangement were proposed. It would appear that local authorities in New Zealand are content to submit to a much greater degree of government control.

Infectious Diseases.

Notifiable Infectious Diseases.

In all the countries visited the ordinary infectious diseases are notifiable, as they are in South Australia. The actual list of diseases varies somewhat in different countries. Medical practitioners are required by law to notify the local authority concerned, and in most countries the notifications are made promptly. A fee is usually paid to the practitioner; in England the amount is 2s. 6d. for each notification; in New Zealand, 3s. 6d. In some American States, although notification is compulsory, no fee is paid; here it is considered that the free laboratory services provided for the practitioner offset the trouble incurred in notifying the cases.

Methods of Control.

The general methods adopted are fairly uniform in the countries visited and are carried out promptly on receipt of notification. There are two lines of action usually followed. First, the health department notified at once investigates the home conditions of the patient, and, if necessary, arranges removal to hospital. The second action is the transmission of the information to the central authority, for statistical purposes, and to assist in the supervision of the country as a whole.

It appears to be recognized by all health authorities that the control of infectious diseases depends for its success on two factors: (*a*) the prompt notification of cases by practitioners and (*b*) prompt action by health departments. Cooperation between private practitioners and the officers of the health departments appears to be very satisfactory in England.

Hospital Services.

The tendency to have patients suffering from infectious diseases treated in hospitals is increasing. The London County Council has eighteen hospitals for infectious cases, providing 8,600 beds. Nor are these hospitals restricted to patients suffering from notifiable diseases. Measles, for instance, is not notifiable in England, yet large numbers of sufferers are treated in the infectious diseases hospitals.

The London institutions, or fever hospitals, are efficiently conducted and excellently equipped. At the North-Eastern Fever Hospital, I was impressed by the high quality of the work. Dr. Harries, the superintendent, makes much use of laboratory aids in diagnosis and treatment. Intra-hospital preventive measures are much used. All measles patients receive an injection of serum to protect against diphtheria and scarlet fever: 2,000 units of diphtheria antitoxin and four cubic centimetres of antiscarlatina serum. Scarlet fever patients are given 2,000 units of diphtheria antitoxin and ten cubic centimetres of anti-scarlatina serum. The electrocardiograph is much used. A Drinker apparatus is available for treatment of respiratory paralysis.

In England, as in most countries, hospitals for infectious diseases make no charge to patients or their families. It is recognized that the proper treatment of patients in suitable hospitals safeguards the rest of the community.

Protective Inoculation.

Vaccination against smallpox was the first inoculation method to be used for making people immune to an infectious disease. In many countries this was a compulsory measure and all infants were vaccinated. In some countries, such as Germany, vaccination is still compulsory; in others, as in England, it is optional. The comparative rarity of severe smallpox in these days has led many countries to rely mainly on quarantine methods as a protection.

One of the medical triumphs in the Great War was the protection of whole armies of men against typhoid fever by injections of the suitable vaccine. Happily, typhoid fever is now a rarity in properly conducted civil communities, and there is not the need for protective inoculation against the disease, except in institutions, such as mental hospitals, where the hygienic practices of the inmates may be of low standard.

In recent years much interest has centred in the prevention of diphtheria by inoculation methods. It is now practicable to banish diphtheria from a community if sufficient numbers of the susceptible population are inoculated. So efficient is the method that in most countries health departments are making it available in their areas. In many American cities intensive campaigns have been carried out; it is interesting to note that in New York in 1933 the one-millionth child in the city was immunized with due ceremony. The policy of the health department in New York City is to encourage the people to be immunized by their usual medical attendants, the department acting as an ethical advertising body in the matter and providing anatoxin free of charge.

In England most of the local authorities provide facilities for immunization free of charge, making it available at infant and child welfare centres, at schools and at residential institutions for children. Most of the London boroughs do this, and so do the large cities, such as Birmingham and Hull. At Croydon Dr. Oscar Holden, the medical officer of health, informed me that several thousand young children of the borough, all the children in residential institutions, and all the nurses in the hospitals had been protected. Dr. Holden stated that the results have been very satisfactory, and diphtheria does not now occur in the residential institutions. The English method is to conduct immunization work as part of the routine activities of health departments, and not as "stunt" campaigns.

In most countries the material used for immunizing against diphtheria is the anatoxin (formalinized toxoid). In America the alum-precipitated toxoid is being used in many cities. One injection of alum toxoid is said to confer immunity, whereas two or three injections of anatoxin are needed to achieve the result. In England the one-injection method with alum toxoid is not favoured. The use of alum toxoid is often attended by persistent swelling and soreness, while anatoxin is unaccompanied by unpleasant results. The use of toxin-antitoxin mixtures has now been abandoned.

Provision of Sera.

Many health authorities not only offer preventive facilities, but also provide sera for treatment. In nearly every part of England antitoxic serum for the treatment of diphtheria is issued free to medical practitioners. This is not a legal obligation on local authorities, but it has become an established practice.

Sera for use against tetanus and other diseases are also made available by many departments. In Aberdeen (Scotland) the health department is particularly generous in this respect.

Pathological Laboratory Services.

In most countries the examination of throat swabs, sputum and other materials in establishing the diagnosis of some of the infectious diseases is carried out gratuitously by local authorities, and medical practitioners are

encouraged to make full use of the public pathological services provided. In Aberdeen this free provision of laboratory services extends beyond the requirements of infectious diseases work and covers the whole field of medical bacteriology, pathology and biochemistry.

Many departments issue special receptacles for the collection of sputum specimens for examinations for tubercle bacilli, and tubes and swabs for obtaining specimens from the throats of diphtheria suspects. In some instances special outfits for the collection of blood for the Wassermann examination for syphilis are also provided.

By the free provision of sera for treatment and of laboratory aids for diagnosis the health departments foster the cooperation of the practising medical profession and make every effort to safeguard the community against the spread of disease.

TUBERCULOSIS.

Notification.

In most countries pulmonary tuberculosis is a notifiable disease; in England tuberculosis of other organs is also notifiable. On notification, health departments conduct investigations with the objects of insuring proper care of the patient, of discovering and removing unfavourable environmental circumstances, and of detecting any early evidences of disease present in other members of the household. Free sputum examinations and the assistance of the departmental tuberculosis dispensary are provided, and free treatment in sanatorium or hospital may be arranged. The National Tuberculosis Scheme in England was instituted in 1911, but some official action on the lines described had been taken long before then. The aim of the national scheme is to use every means, medical and social, so that there may be no patient with tuberculosis uncared-for.

The notified patient is kept under surveillance by the health department during the whole period of the illness and is assisted in every way in the fight to overcome the disease. When a patient has been free from symptoms of the disease for two years he may be classed in the "arrested" group, and after three further years' freedom from symptoms he may be certified "cured". A name will not be removed from the notified list within five years from the date of notification.

The Dispensary System.

The dispensary system is the recognized basis of official measures against tuberculosis. There are in England today nearly 500 tuberculosis dispensaries. These dispensaries or clinics are conducted by local authorities and serve as the focal point for all official anti-tuberculosis work. Each dispensary is in the charge of a specially trained, whole-time medical officer, the tuberculosis officer for the area, and he is responsible to the medical officer of health. Private practitioners on the whole cooperate readily with the dispensary officers and send their patients for investigation. The tuberculosis officer then decides whether the patient is suitable for home treatment or for admission to an institution, either sanatorium or hospital. Contacts and suspects are also investigated at the dispensary. The services of the tuberculosis officer and the dispensary are also available in a consultative capacity to private medical practitioners. Free sputum examinations and X ray examinations are provided at the dispensary.

Tuberculosis work in the London area is shared by the County Council Health Department and the departments of the constituent boroughs. Each borough conducts a dispensary and supervises the home conditions of patients. The County Council provides all institutional treatment. The arrangement appears to work satisfactorily.

Institutional Treatment.

The severity with which tuberculosis affects different patients varies greatly. Where the illness is of mild and sluggish type, treatment in a residential institution may not be necessary. Moreover, many patients, even if seriously ill, may be satisfactorily nursed and treated in their own homes if hygienic and financial requirements can be met. Most authorities agree, however, that a term of residence in a sanatorium or hospital is desirable, especially when the disease first manifests itself. The patient learns how to order his life and the physician is able to make that complete observation of the patient that is so useful a preliminary to successful treatment. It is to be noted that sufferers cannot be compulsorily removed to institutions unless it is established that they are unable to be cared for satisfactorily at home, and then only on the order of a magistrate.

Dispensaries are mainly for investigation and not for treatment. Local authorities in England provide hospitals and sanatoria for the observation and treatment of patients. Some of the smaller local authorities combine to provide this institutional treatment. The patients in these institutions are treated without charge to themselves or their families. There are also numerous unofficial sanatoria where patients pay fees and receive treatment by private arrangement. The London County Council not only provides its own sanatoria and hospitals, but also arranges with several voluntary institutions in country areas to receive London patients, the council paying forty-five shillings per week per patient towards the cost, the patient paying the balance.

The trend in England is towards the development of the hospital-sanatorium, the one type of institution for patients with tuberculosis of all grades of severity, from mild to advanced. The institutions I inspected were all well equipped for X ray and laboratory work; the provision of such facilities is regarded as essential in all modern sanatoria. Sir George Newman says that "the effective sanatorium should in fact be a sanatorium-hospital, dealing with all its patients on thoroughly up-to-date lines, medical and surgical". In many instances children are treated with adults in the same institution; it is considered that the presence of children stimulates and encourages the older patients.

Open air schools are available in many parts of England for children showing the slightest signs of tuberculosis. They are conducted like ordinary schools, except that the teaching is as far as possible under open air conditions and the whole activities are under medical supervision. Often the children are carried between the school and their homes by special omnibuses.

The Lord Mayor Treloar Cripples' Hospital and College at Alton, in Hampshire, was originally opened for the treatment and training of children afflicted with surgical forms of tuberculosis. During the last few years children suffering from rheumatism and other chronic illnesses have also been admitted. The liberal use of open air and sunlight is the basis of the treatment. Elaborate light treatment rooms are also provided. Most of the children do school work and the older boys have vocational training in carpentry, cabinet-making, bootmaking and the like. The institution is a very efficient and pleasant one, and the results of treatment have been remarkable.

Village Settlements.

While in England I spent a very interesting day at Papworth, near Cambridge, and through the kindness of Sir Pendrill Varrier-Jones, the Medical Director, was able to observe the excellent arrangements at the tuberculosis colony there. The institutions consist of hospital, workshops and village, and the colony is completely under medical supervision. On admission patients are kept in bed in hospital for investigation and treatment. As improvement ensues, graduated work is provided. Carpentry, cabinet-making, furniture-making, leather work and printing are the principal activities. For some months a patient may remain under hospital care and yet be allowed to work for a few hours each day. With further improvement he may be allowed to return home or, if a suitable person, may take up permanent residence in the village.

Papworth gives sanatorium treatment in the early case of tuberculosis, hospital treatment and segregation in the advanced case, sheltered employment in the "middle" case,

and enables the children of the settlers to grow up into healthy citizens.

The hospitals and sanatorium at Papworth accommodate 327 men and 106 women. The village of over 100 houses is inhabited by ex-patients (who earn their living in the industries) and their wives and children. The industries managed and staffed by ex-patients employ 400 patients and ex-patients; in 1933 goods to the value of £88,000 were produced and £25,000 was paid in wages.

The British Legion Village at Preston Hall in Kent is a similar institution for ex-service men suffering from tuberculosis. Here, as at Papworth, no child born in the settlement, while a member of the community, contracted tuberculosis in any recognizable clinical form—a striking indication of the efficiency of the scheme.

Sir George Newman, in his report for 1933, has well expressed the value of the village settlement. He says:

> It is not merely a colony for segregation of consumptives. Its task is to reduce to a minimum the liability to relapse. It practises effective modern treatment . . . . Many of its patients return to the workaday world with the disease arrested or improved. The chosen few become resident in the settlement. Beyond all this the healthy children of the settlement demonstrate how tuberculosis can be successfully prevented. It is not only a place for the treatment of disease: it is also a demonstration of occupational therapy, of prevention, and of health education of the very highest value.

Home Supervision.

Health visitors, nurses specially trained in tuberculosis and other public health work, are employed by local authorities to visit the homes of patients. They are able to guide the patient and home attendants in hygienic principles and to assist in maintaining proper conditions for the care and comfort of the patient and for preventing the spread of the disease. A sound system of regular home visiting helps to safeguard the patient and assists him after he has returned from the sanatorium. It is emphasized that the settling of a patient in a sanatorium is only one incident in the treatment. The long-continued after-care, when the patient has left the sanatorium, is the important thing.

Care Committees.

The importance of after-care has been noted, and all local authorities endeavour to have this work carefully conducted. In most cases a care committee is established; the members include official and voluntary workers, and funds are obtained from public subscription and from subsidies by local authorities. The care committee helps the patient and his family to combat the social consequences of the illness. The committee cooperates with the dispensary and the health visitors. The voluntary workers, mainly women, are very enthusiastic, and they devote much time, money and energy to their self-imposed duties.

In June I attended the annual conference of the National Association for the Prevention of Tuberculosis held at the County Hall, Westminster. This association is a large and very active voluntary body, which coordinates the work of care committees throughout the country. It also aims to educate patients and the general public in the nature of tuberculosis and the rational methods of fighting the disease. At the conference a detailed review of the National Tuberculosis Scheme was given, and a *résumé* of the experience of the twenty-one years of its work.

In Canada a similar tuberculosis association exists and is actively engaged in getting better care for sufferers and in stimulating the preventive work in the general community. It is largely supported by government grants.

In a protracted illness, as tuberculosis usually is, the patient's finances may become seriously depleted. Indeed it might be said that at the present day tuberculosis is as much an economic problem as a medical one, and from the economic aspect the care committee's work is invaluable. I think, too, that the work of such committees has helped to reduce the exaggerated fear of the disease and to remove the stigma attaching to sufferers. In the past the unfortunate consumptive and his family were neglected and shunned; now they are helped and encouraged.

Tuberculosis in Cattle.

The existence of tuberculosis in cattle, especially in milch cows, and the possibility of the transmission of the disease to human beings has long been recognized. Most health departments take measures to insure a tubercle-free milk supply in their areas. This subject will be considered in greater detail in a subsequent part of this report.

Research Work.

Most institutions for tuberculous patients have well equipped laboratories and carry on active research work. At Alton special studies have been made on the effects of sunlight, ultra-violet light and other rays on patients and on the tuberculous lesions. Investigations into the different types of tubercle bacilli, especially the "rough" and "smooth" forms, are being done at Papworth. At Monrovia Sanatorium, Southern California, Dr. Pottenger and his associates have made clinical researches mainly into the effects of treatment by artificial pneumothorax and by tuberculin.

Official departments are also vigorously prosecuting studies of various aspects of the disease. The British Ministry of Health has caused investigations to be made into the incidence and prevention of the bovine form of tuberculosis. The Medical Research Council has interested itself in bovine tuberculosis and its transmission to human subjects; under the direction of the council, Dr. A. S. Griffiths, of Cambridge, is making inquiries into the frequency with which human and bovine types of tubercle bacilli cause meningitis and pulmonary tuberculosis.

An interesting clinical research study is being conducted by the Massachusetts (United States of America) Health Department into the subject of tuberculosis in children. A ten-year programme is in progress. Thus far over 400,000 children have been examined and tested with tuberculin. All positive reactors are submitted to X ray examination. The procedure is very valuable in detecting cases in the very early stages and as a preventive measure. It also teaches the people valuable lessons in tuberculosis control. It is a costly procedure, but is worth the expense.

Continued research will doubtless reveal many facts as yet unguessed, and humanity's armamentarium to combat tuberculosis will be strengthened. It is well to remember, however, that the general characters of the disease and the way to deal with it are already well understood. It has been said that the question no longer is: "Can tuberculosis be conquered?" but rather: "Will it be?"

(To be continued.)

Post-Graduate Work.

REFRESHER COURSE IN BRISBANE.

THE Queensland Post-Graduate Committee announces that the annual refresher course will be held at Brisbane from May 23 to 31, 1935. The fee for the course, two guineas, is payable in advance to the Honorary Secretary, Dr. H. W. Johnson, B.M.A. Rooms, 35, Adelaide Street, Brisbane.

The programme is as follows:

Thursday, May 23, 1935.

9.30 a.m.—Registration, Brisbane Hospital.

10 a.m.—Dr. Eustace Russell: Demonstration, ward cases, Brisbane Hospital.

2 to 3.30 p.m.—Dr. J. V. Duhig: Autopsy demonstration, Brisbane Hospital.

4 p.m.—Dr. Alex. Murphy: Clinical Cases, Brisbane Hospital.
8.15 p.m.—Sir Raphael Cilento: Lecture, "Short Period Fevers in North Queensland", Geological Theatre, University.

Friday, May 24, 1935.

9 a.m.—Dr. E. D. Ahern: Operations, Mater Misericordiæ Public Hospital.
11 a.m.—Dr. G. W. Macartney: Operations, Mater Misericordiæ Public Hospital.
2 p.m.—Dr. Walter Crosse's Clinic: Ear, nose and throat demonstration, Brisbane Hospital.
8.15 p.m.—Branch council meeting (country members invited), B.M.A. Rooms, Adelaide Street.

Saturday, May 25, 1935.

9 a.m.—Dr. Alan Lee and Dr. Neville Sutton: Demonstration of minor surgery, Brisbane Hospital.

Monday, May 27, 1935.

10 a.m. to 12 noon.—Short illustrated lectures: Dr. J. W. Heaslop, "Common Skin Conditions: Their Diagnosis and Suggestions for Treatment"; Dr. Noel Gutteridge, "Teeth in General Practice"; Dr. C. A. Thelander, "Pelvic Fasciæ and Supports"; Dr. J. M. Thomson, "Abdominal Conditions following Accident", Geology Theatre, University.
2 to 3.30 p.m.—Mr. Hugh Trumble: Practical demonstration of plaster and splints, Brisbane Hospital.
4 to 5 p.m.—Dr. G. A. C. Douglas: Ward demonstration, Brisbane Hospital.
8 p.m.—Dr. Harold Ritchie: Lecture, "Digitalis Medication", Brisbane Hospital.

Tuesday, May 28, 1935.

9 to 10 a.m.—Dr. S. F. McDonald: Lecture-demonstration, "Backward Children", Hospital for Sick Children.
10 to 10.30 a.m.—Dr. L. G. Hill: Demonstration, umbilical hernia, Hospital for Sick Children.
11 a.m.—Dr. Cliff Tucker: Demonstration, osteomyelitis in children, Hospital for Sick Children.
2 p.m.—Dr. Harold Ritchie: Lecture, "The Dyspepsias", Geological Theatre, University.
4 p.m.—Dr. Graham Brown: Lecture, "Some Subjects of Interest in Nose and Throat Surgery", Geological Theatre, University.
8.15 p.m.—Mr. Hugh Trumble: Lecture, "Head Injuries", Geological Theatre, University.

Wednesday, May 29, 1935.

9.30 to 10.30 a.m.—Dr. Earnshaw: Ward demonstration, Mater Misericordiæ Children's Hospital.
11 a.m. to 12 noon.—Dr. Ellis Murphy: Ward demonstration, Mater Misericordiæ Public Hospital.
Afternoon free.
8.45 p.m.—Dance, Belle Vue Hotel.

Thursday, May 30, 1935.

9 a.m.—Dr. Meyers and Dr. McLelland: Operations, Brisbane Hospital.
2.30 p.m.—Dr. Penfold: Lecture, "The Present Position of Serum Therapy", Geological Theatre, University.
4.30 p.m.—Dr. Harold Ritchie: Lecture, "The Various Forms of Acute Nephritis, with Special Reference to Prognosis", Geological Theatre, University.
7.30 p.m.—British Medical Association (Queensland Branch) Dinner, Rowe's Café.

Friday, May 31, 1935.

10 a.m. to 12 noon.—Short illustrated lectures: Dr. Leslie Gibson, "Painful Flat Foot"; Dr. Kenneth Wilson, "Breech Presentation"; Dr. Jarvis Nye, "Newer Aspects of the Anæmias"; Dr. E. H Derrick, "Diseases of the Parathyreoid Glands", Geological Theatre, University.
2 p.m.—Mr. Hugh Trumble: Lecture, "The Rôle of Surgery in Tuberculosis of Spine, of Hip, Pulmonary", Geological Theatre, University.
8 p.m.—Dr. Penfold: Bancroft Oration, "Medical Research in Australia: Its Development and Future", Geological Theatre, University.

Correspondence.

HOSPITAL POLICY FOR BRANCHES IN AUSTRALIA.

SIR: With reference to the report of the meeting of the Federal Council held in Melbourne on February 28 and March 1, 1935, which appeared in THE MEDICAL JOURNAL OF AUSTRALIA of March 23, I have to advise you that the proposal of the Queensland Branch regarding a Hospital policy was that the matter should be discussed, not by the general body of members, but by representatives of the Australian Branches at the meeting of the British Medical Association to be held in Melbourne in September, 1935.

Yours etc.,

J. G. HUNTER,
General Secretary, Federal Council of the British Medical Association in Australia.

135, Macquarie Street,
Sydney,
April 11, 1935.

Congresses.

THE INTERNATIONAL CONGRESS ON INDUSTRIAL ACCIDENTS AND DISEASE.

THE seventh International Congress on Industrial Accidents and Disease (*Congrès International des Accidents et des Maladies du Travail*) will be held in Brussels from July 22 to 26, 1935. Dr. D. Glibert will be President. The work of the congress will be divided into two Sections—Medicine and Surgery. Combined discussions will also be held. Further information may be obtained from the General Secretary, Dr. Léo Dejardin, 23, Rue du Commerce, Brussels.

Obituary.

RICHARD RAWDON STAWELL.

ON Thursday, April 18, 1935, Sir Richard Rawdon Stawell died at his home in Spring Street, Melbourne, after a short illness. For months past he had devoted his whole energy to the completion of the arrangements in connexion with the forthcoming annual meeting of the British Medical Association, of which he was President-Elect. The members of the Association throughout the world will receive the news of his death with deep regret. At a later date a full account of his career and an appreciation of his services to medicine will be published.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A meeting of the Senate of the University of Sydney was held on April 1, 1935.

The degree of Master in Surgery (Ch.M.) was conferred *in absentia* upon Stuart Vance Marshall, M.B.

The following appointments were approved: Mr. A. B. A. Palmer as Assistant Lecturer and Senior Demonstrator in Prosthetic Dentistry; Mr. A. C. Rowell, B.D.S., as Acting Demonstrator in Prosthetic Dentistry.

The Barker Graduate Travelling Scholarship and the John Coutts Scholarship were awarded to Mr. R. E. B. Makinson. (Mr. Makinson will graduate Bachelor of Science in May next with First Class Honours and the University Medals for Physics and Mathematics.)

The Walter and Eliza Hall Research Fellowship in Agriculture was awarded to Mr. R. D. Wilson, B.Sc.Agr. (Mr. Wilson graduated in 1932 with First Class Honours and will carry out his research work at Sydney University.)

Science Research Scholarships for one year were awarded to Mr. B. Cortis-Jones (Organic Chemistry), Mr. E. D. Garretty (Geology), Mr. L. S. King (Chemistry), Miss A. T. Melvaine (Botany), and Miss E. C. Pope (Zoology).

On the recommendation of the Faculty of Veterinary Science it was resolved to admit Mr. R. M. C. Gunn, B.Sc.Agr., B.V.Sc. (Sydney), B.Sc. in Veterinary Science (Edinburgh), M.R.C.V.S., Lecturer in Veterinary Surgery and Anatomy in the Veterinary School since 1922, to the degree of Doctor of Veterinary Science for his thesis entitled "Studies in Fertility in Sheep". The examiners reported that Mr. Gunn's thesis was "an original contribution of distinguished merit, adding to the knowledge and understanding of veterinary science". Mr. Gunn graduated in 1915 as Bachelor of Science in Agriculture with First Class Honours, and in 1922 was admitted to the degree of Bachelor of Veterinary Science *ad eundem gradum*.

Diary for the Month.

Apr. 29.—Victorian Branch, B.M.A.: Council.
May 1.—Western Australian Branch, B.M.A.: Council.
May 1.—Victorian Branch, B.M.A.: Branch.
May 2.—South Australian Branch, B.M.A.: Council.
May 3.—Queensland Branch, B.M.A.: Branch.
May 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
May 7.—Tasmanian Branch, B.M.A.: Council.
May 10.—Queensland Branch, B.M.A.: Council.
May 14.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
May 14.—Tasmanian Branch, B.M.A.: Branch.
May 15.—Western Australian Branch, B.M.A.: Branch.
May 15.—Victorian Branch, B.M.A.: Clinical Meeting.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser", pages xiii, xiv, xv.

Children's Hospital (Incorporated), Perth, Western Australia: Junior Resident Medical Officer.

Heatherton Sanatorium, Cheltenham, Victoria: Resident Medical Officer.

Launceston Public Hospital, Launceston, Tasmania: Resident Medical Officer.

Mooroopna Hospital, Mooroopna, Victoria: Junior Resident Medical Officer.

State Public Service, Brisbane, Queensland: Director, Laboratory Section.

The University of Melbourne, Victoria: Demonstrators in Clinical Physiology.

Medical Appointments: Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
New South Wales: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phœnix Mutual Provident Society.
Victorian: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
Queensland: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associate Friendly Societies' Medical Institute. Chillagoe Hospital. Members accepting LODGE appointment and those desiring to accept appointments to any COUNTRY HOSPITAL, are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
South Australian: Secretary, 207, North Terrace, Adelaide.	Officer of Health, District Council of Elliston. All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
Western Australian: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
New Zealand (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to The Medical Journal of Australia alone, unless the contrary be stated.

All communications should be addressed to "The Editor", The Medical Journal of Australia, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

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